

LEM NEWS



Livestock Environmental Management Newsletter

Volume 6, Issue 1. March 2017.

Professionalism in Manure Management

[North American Manure Expo](#) returns to Wisconsin August 22-23, 2017

The Manure Expo, the industry's premier educational and demonstration event, boasts a spacious outdoor exhibition trade show for large vendor sets, land application demonstrations, and manure technology and agitation demonstrations, along with opportunities for continuing education credits for several professional certifications including CLMs and CCA's.



Tuesday, August 22 is TOUR DAY, with participants' choice of three tours in the morning. The registration fee for tours is only \$20, while all other events are free!

Tour #1 - Statz Brothers Inc, Sun Prairie, WI milks more than 2,700 Holsteins and runs nearly 6,000 acres of corn, soybeans, forage and small grains. Their tour will showcase a 4000-cow manure digester, their bedding recycling program, and a 750,000-gallon manure pit.

Tour #2 - Arlington Ag Research Station, associated with the College of Agricultural and Life Sciences at the

(Continued on page 8)

Hello! After our little taste of a good ol' North Dakota winter I think it's safe to say that April showers and May flowers will be most welcomed! While thoughts of grills, bon fires and green grass may be at the forefront of your mind, it's also important to remember the things that need to be managed before then.

With extended periods of cold weather coupled with more snow than we've seen for three years, livestock were confined longer and bedded more than usual. This means extra manure this spring as well as the potential for fuller-than-normal containment ponds.

Now is the time to consider the best management techniques for pond pumping (if necessary) to avoid a bank breach.

It's also time to get on the [ND Customer Manure Hauler](#) list.

In this issue you will find pond management suggestions, reminders of how to calibrate manure (fertilizer) spreaders as well as some hellos, good-byes, and a meeting recap. Thank you for reading LEM News! If you have comments, questions or just want to visit about "brown" contact me anytime. Happy Spring! — MB

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Emily Goff moves to Ward County 4-H

Emily Goff is the new Extension Agent for 4-H Youth Development in Ward County (Minot). We know Emily as the very friendly (and now former) Agent in Training for Eddy, Foster and Wells Counties.

As an Agent in Training Emily was involved in two county fairs (held at the same time!) and several county achievement days. She also was actively involved in day camps for youth, assisting and teaching at 4-H Camp and Ag in the Gym. Emily was a welcome and willing assistant and leader, involved in many Extension projects from teaching ag safety adult and youth, to sampling all the stuff that farmers, ranchers, and manure haulers value.

Emily is a graduate of University of Minnesota, Crookston. While a student at the UM, Crookston she was a member of the student orientation staff, a member of student government and Chair of the Student Programming and Activities for Campus Entertainment. She was also a 4-H member growing up in Minnesota and was a 4-H Extension Intern with the University of Minnesota Extension Service in Swift County.

We had the opportunity to visit with Emily before she left for Minot.

“Hello” to Megan Ruch

Q: What's your new position? What will you do at the Livestock Unit?

Megan: I am the newest Livestock Technician and I help in the management of the livestock unit (along with Tim Schroeder).

Q: What are you most excited about?

Megan: I am very excited to be in a career that will allow me to help with more research so that maybe someday I can do my own research projects.

Q: What/where were you prior to joining us?

Megan: I graduated from NDSU in December of 2015 and had worked at the NDSU Beef Cattle Research Complex since my sophomore year at NDSU. After that, I was in an internship working for T-T Ranch in Grace City.

Q: What's your favorite thing to do outside of work?

Megan: I love watching movies, cooking/baking, photography, and traveling.

Q: Anything else you want to share?

Megan: I am very excited to offer my best to the CREC and hope that in return, I may learn some new things!



Megan Ruch, Livestock Technician at the Carrington REC.

Q: What has been your favorite part of being an NDSU Extension agent-in-training?

Emily: No day is the same! Some weeks consisted of every day in the office. Others I was outside all day. I loved learning hands-on about everything ranging from horticulture, livestock, agronomy, 4-H management and program planning.

Q: What has been your least favorite part of being an NDSU Extension agent-in-training?

Emily: One of the requirements that I had to do was make a binder. This binder has a list of certain requirements that need to be met. One of them was writing a lesson plan for every single presentation I had given during my time as an AIT. It's great looking back at it now, it's almost like a scrap book.

Q: What has been the craziest thing you have seen during your time as an agent-in-training?

Emily: A few things come to mind, but I would say the hail storm during the 4th of July. The eastern end of Eddy County was devastated by it. I have never seen a field completely destroyed by hail before.

The most crazy thing that happened during my AIT experience was a murder in New Rockford about a week after I moved there. All the locals said it was random, but I thought it must be the strangest place I could have moved to!

Q: Where are you headed and what are you most excited about for the future?

Emily: I will be working in Ward County as the 4-H Extension Agent. I am really excited about working with the families in Ward County. I have been blown away by how eager they are to meet their new agent and inviting me to visit their clubs. Some have even sent me a message wishing me luck during my first week! I have always been passionate about 4-H and want others to have a positive experience like I had growing up. I would like others to know that 4-H has a broad spectrum of subjects and that anyone can find their “niche.” It's not just for those who live in the country and have farm animals.

Q: Anything else you'd like to share?

Emily: I have absolutely loved this job! I work with some amazing people and I would do it all again if I could!



Emily Goff, Extension Agent for 4-H Youth Development, Ward County.

Manure Haulers Annual Meeting

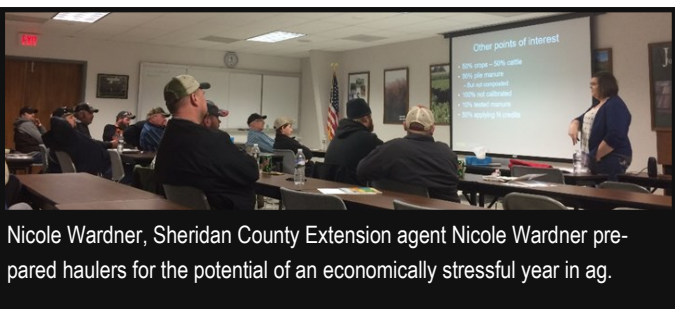
The 3rd Annual North Dakota Custom Manure Haulers workshop was held on Wednesday, February 22nd in Mandan.



Learning about personality preferences develops better communication with employees and customers.

The haulers started the morning with Real Colors personality typing to identify communication and behavior motivators in themselves and in others (like family, employees, and clients). Jim Gray, District Director with the NDSU Extension Service provided leadership for this interactive program. Real Colors helped haulers understand how people prefer confrontation, how they like to work (alone or together) and how they like to be thanked (simple compliment vs. grandiose gesture). The haulers were able to share their customer service practices with one another and give some advice based on customer personality preference. Haulers said that, because of this training, they intend to interact with people differently by listening to their communication preferences.

The afternoon kicked off with a presentation about controlling compaction. Jodi DeJong-Hughes from the University of Minnesota Extension joined us via a live webinar with an insightful look at compaction: how it happens, how to alleviate it and how to avoid it. Haulers learned how deep compaction can run and how to control it by selecting where they drive and/or using different tires.



Nicole Wardner, Sheridan County Extension agent Nicole Wardner prepared haulers for the potential of an economically stressful year in ag.

The day ended with Sheridan County Extension agent Nicole Wardner discussing perspectives from beef producers. The recipient of a [SARE](#) professional development grant, Wardner accompanied the LEM program to the 2016 North American Manure Expo in London, OH. The SARE professional development program challenged her to bridge the gap between haulers and producers.

If you are or know a custom manure hauler and would like to be informed of upcoming meetings and events, please contact mary.berg@ndsu.edu. You can find the March 2017 ND Custom Manure Haulers list here: www.ag.ndsu.edu/lem.

Thank you to GCR Tires & Service for sponsoring lunch and MMI International for sponsoring our guest speaker. —*Mary Berg*



The North American Manure Expo
"Crappiest T-Shirt Slogan" contest is back!

Applications due: June 15th

Winning slogan entrants will receive a free t-shirt!

Oh, yeah....it's BACK!!!

Worldwide North American fame, not much fortune, but you MIGHT win a free t-shirt!

Post your entries for the 2017
North American Manure Expo
"Crappiest T-Shirt Slogan"
Contest

...enter as many times as you want,
but get your crappy suggestions in by
June 15, 2017.

CLICK TO ENTER CONTEST!

Stats for the Rest of Us... How to Read Your Annual Report

Reprinted from Center Points blog 02/13/17



Difficult though it may seem to many of us, statistical analysis is a fundamental tool that researchers at the CREC use on data to develop conclusions which helps identify whether treatments affect yield, gain, etc., or not. Data usually comes from experiments where scientific approaches test variables (fertilizer, variety, herbicides, soil tillage, feedstuff, diets, components in a diet, etc.) and measure crop (yield, protein content, height, etc.) or livestock (daily weight gain, carcass weight, marbling, etc.) response to those variables (called treatments). Among them is a control (or check), to which the others are compared. Treatments are applied to experimental units (plots). For livestock experiments, a plot could be a pen with 10 steers in it, or each individual steer in the pen. For crop trials, we usually use field plots, which can vary in size from a few square feet to a few acres.

Experimentation has two basic principles: **replication** and **randomization**. **Replication** means that treatments within our trials are typically exist three to six times within a trial (i.e. treatments are replicated 3-6 times). This helps determine a true average for a treatment. **Randomization** means that plots are placed randomly throughout a trial area to avoid instances where some treatments experience better conditions than others due to location variability.

This example table is from a actual trial completed at the CREC in 2016. The first column lists the treatments (rates of nitrogen) and “Check.” The remaining columns are variables potentially affected by the treatments. Table 1 summarizes the data from the study by using the mean (of four replicates) for each treatment.

These statistical terms are crucial to interpreting the results of any trial.

Mean –Is the same as average. The values presented for each treatment are the mean of 4 replications of that treatment within the trial.

Standard deviation (SD) - a measure of the variation within a set of data values. A low SD indicates that values cluster close to the mean, while a high SD results from values spread over a wide range from the mean.

Actual table from the 2016 CREC Annual Report page 13:

Trt name	Flag leaf nitrogen	Yield	Test weight	250 kernel weight	Grain protein	Grain N-uptake
	%	bu/ac	lb/bu	g	%	lbs/ac
Check	4.48b	29	59.48	7.21	13.81c	39
40 lbs N	4.75a	34	59.56	7.08	14.50c	47
80 lbs N	4.84a	35	59.16	7.12	15.25b	51
100 lbs N		31	59.18	7.16	15.36ab	46
120 lbs N	4.92a	37	59.1	7.16	15.62ab	56
160 lbs N	4.86a	35	58.82	7.07	15.73ab	52
65-30 lbs N split		35	59.48	7.01	15.48ab	52
65-50 lbs N split		30	58.98	6.96	15.99a	46
CV	3.26	17.09	0.85	3.64	3.50	18.20
LSD (0.05)	0.205	NS	NS	NS	0.687	NS

Coefficient of Variation(CV) – the CV represents the SD of a data set as a percentage of the mean (CV= [SD/Mean]*100). A higher CV means there is more variability within the data set whereas a low CV means the data is more consistent. The green box in the table demonstrates that “Yield” and “Grain N-uptake” show the largest CV values and thus more variability in the data.

P-value - if the *p*-value is less than or equal to the chosen significance level (typically 5%), it means that you are at least 95% confident that two treatment means are different, but it does not tell which treatment is better or worse. For that we use other statistical tests, such as the least significant difference.

Least Significant Difference (LSD) – takes into account variability within a trial to calculate whether means are truly different by identifying the smallest (statically) significant value that is used to compare means. Any difference larger than the LSD value is considered significant (see LSD values (blue box) for “Flag leaf nitrogen” and “Grain protein” in Table 1). Notice that the means for those variables are followed by lower case letters. The way to read this is if two means are followed by the same letter they are not significantly different (purple box). When the difference between two means is smaller than the LSD value, the difference is called not significant and the LSD is usually represented by the letters “NS” (see LSD values for “Yield”, “Test Weight”, “250 kernel weight”, and “Grain N-uptake” in Table 1, gold box), and no letters are written behind the mean values since they will all be identical.

Our hope is that this helps clarify things when you’re reading the Annual Report or listening to one of us present during a meeting. If you have questions about how to read something or what we’re trying to convey, don’t hesitate to contact us. You can request a printed copy of the CREC 2016 Annual Report by contacting us. We’re all available at 701-652-2951. — Mary Berg

Is My Compost “Contaminated”?

Reprint from Center Points blog 01/30/17

Herbicides are a common and widely accepted tool used to control weeds or undesirable vegetation. Persistent herbicides are long-acting herbicides used on hard-to-control weeds, often broadleaves. This type of herbicide may be used on grain crops, lawns, pastures and hayfields to successfully control weeds, year after year.



Example of plant damage resulting from application of manure containing a persistent herbicide. Photo from NDSU Sheridan Co. Extension office.

While persistent products are praised by many because of their effectiveness, they are also cursed by many...because of their effectiveness. Typically those cursing don't know they are dealing with a persistent herbicide until damage to desirable plants occurs. When we paint a fence we can see the paint persists for many years; however when we spray weeds we do not see the herbicide persist in the soil or on the plant vegetation.

These products only become an issue when either crop rotation restrictions are not followed (field scale) or you use “contaminated” compost in your vegetable plots, garden, high tunnel, etc.

So how do persistent herbicides end up in compost? If you follow the graphic provided on the

label of Milestone® (<https://s3-us-west-2.amazonaws.com/greenbook-assets/L79495.pdf>) you will see that when the herbicide is applied to either a hayfield or pasture and consumed by an animal it simply passes through the animal (no harm done to the animal) and remains effective (no harm done to the herbicide) in the manure. If this “herbicide-contaminated” manure is applied to any broadleaf crop damage may occur. **Composting** the manure does not lessen the persistence of every herbicide either. So when “contaminated” compost is applied to vegetable plots, gardens, etc. the outcome for sensitive crops (beans, tomatoes, potatoes, peppers) is stunted growth and decreased yields, and possibly death. Keep in mind that manure from herbicide-treated crops can be managed by following herbicide-specific label instructions.

How do you know if your field is ready to plant? You should always follow label instructions and rotation restrictions. You may also follow the Field Bioassay Instructions found on page **101** of the **2017 ND Weed Control Guide**. For some herbicides, dilution of the product in the soil by way of tillage is another method to reduce the risk of carryover (**page 100-101**).

How do you know if your compost is herbicide free and ready to use? You can conduct a simple plant bioassay by following these steps from Washington State University: <https://www.greenmountaincompost.com/cms/wp-content/uploads/2012/06/WSU-Bioassay-Test-Instructions.pdf>. Dow AgroSciences offers a testing protocol as well: <http://www.manurematters.com/na/en/bioassay.htm>. If you find that you have residue issues you can possibly use dilution as a means of mitigation here too, depending on the concentration of residual.

Whether you're working with persistent herbicides on a field-scale or in your garden, it's important to **follow label instructions**, rotation restrictions and inform those who may purchase hay, manure or compost from you about what you have used. Great stewardship will keep all of our plants growing! — *Mary Berg, Area Extension Specialist, Livestock Environmental Management.*

Know What You Need, Know What You Spread

Mother Nature not so kindly reminded us in December and January what a real North Dakota winter can be like. Because of that, there will be a lot of manure to be hauled this spring and fall – but that’s not necessarily a bad thing because we know manure makes a great fertilizer and soil amendment! However, we want to make sure we’re using only the nutrients we need and not creating a potential pollution event.



Accurate manure sampling is the first step in proper spreading.

The first step in using manure/compost as fertilizer is to sample it for nutrient content. Sampling technique and area commercial laboratory information can be found here: <http://www.ag.ndsu.edu/lem/resources/manure-nutrient-sampling-and-testing>.

Next, soil testing for nutrients is equally as important as testing manure. Information on soil sampling technique and reading your soil test results can be found in this video: https://www.youtube.com/watch?feature=player_embedded&v=zx-bsMlj_8g. Having field crop history, manure and soil nutrient test results and future crop information will help you determine the amount of fertilizer (manure, compost and/or commercial) that needs to be applied. Using the calculators designed specifically for ND corn producers (ND Corn Nitrogen calculator found here: <https://www.ndsu.edu/pubweb/soils/corn/> and the ND Manure Corn Nitrogen and Phosphorus calculator found here: <http://www.ag.ndsu.edu/lem/manure-corn-n-p-calculator>) will offer you some fertilizer guide-

lines to follow and assure that you are neither under- or over-applying fertilizer. Both can have detrimental effects, be it on the checkbook or environment.

Now that you know how much manure/compost to apply, it is time to calibrate the spreader. Calibrating the manure spreader is a simple process and can be done with items that are most likely already present on the farm. An explanation of two manure spreader calibration techniques with easy-to-follow worksheets can be found here: <https://www.ag.ndsu.edu/publications/livestock/manure-spreader-calibration-for-nutrient-management-planning>. The following steps highlight how to calibrate a manure spreader using the sheet method. This method can be done with your personal spreader or a custom spreader.

Materials:

- Sheet or tarp that measures 21.8 feet² (you can use any tarp, you just need to know its area (length ft x width ft))
- 5-gallon bucket
- Scale

Process:

1. Weigh the bucket and sheet to tare the weight of the manure.
2. Lay out the sheet and anchor it down with a few rocks or stakes.
3. Record your tractor gear, engine’s revolutions per minute (RPM) and spreader settings.
4. Apply the manure over the sheet.
5. Weigh the manure-covered sheet in the bucket.
6. If the tarp measures 21.8 ft², the weight in pounds of manure on the sheet is equal to tons/acre. If not, simply multiply the bucket weight by 21.8 and divide that by the tarp area in square feet (ft²).



Take an average of three spreader trails when calibrating.

Do this 3 times or set up 3 separate sheets and use an average of the weights.

I would like to help five (5) crop producers and/or custom manure haulers calibrate their manure spreaders this spring. If you would like help calibrating a manure spreader please contact me at 701-652-2951 or mary.berg@ndsu.edu.

Waste to Worth 2017

[Waste to Worth 2017](#) is the third International Conference on Livestock and Poultry Environmental Quality, bringing together the nation's best science with innovative outreach on animal agriculture and the environment. This conference will offer opportunities to meet and network with the outstanding people behind the science and solutions. The Waste to Worth Conference is hosted by a national network of agri-professionals addressing issues related to air, water, soil, and climate. [Register Now for the Waste to Worth Conference](#)

Tuesday, April 18, 2017 - Friday, April 21, 2017
Embassy Suites Raleigh/Durham
201 Harrison Oaks Boulevard, Cary, North Carolina 27513

This year, in conjunction with the Waste to Worth conference, there will also be a Mass Animal Mortality Management Workshop on April 18, with separate registration from the conference. [Click here for details about the Mass Animal Mortality Management Workshop.](#)

Who Should Attend? Those who make or influence environmental management decisions on livestock and poultry farms, including ag and environmental organizations, consultants, cooperative extension agents and specialists, equipment manufacturing and sales reps, farmers/growers, Natural Resources Conservation Service (NRCS) staff, regulatory and policy staff, and researchers.

Areas of Emphasis

Environmental quality • Soil health • Climate change • Environmental planning • Feed management
Manure nutrient management • Manure treatment technologies • Pathogens • Regulation
Small farms & beginning farmers • Mortality management • Manure management
Manure value & economics • Case studies & on-farm experience • Harnessing innovative delivery methods
Responding to natural disasters • Emerging contaminants & issues



[Waste to Worth International Conference on Livestock and Poultry Environmental Quality](#)

April 18-21, 2017 in Raleigh, NC

Join a national network of agri-professionals addressing issues related to air, water, soil, and climate. The focus of the Waste to Worth Conference is science-based environmental management on livestock and poultry operations and utilization of manure as a resource.

NAME 2017 in Wisconsin *(Continued from page 1)*

University of Wisconsin-Madison, will demonstrate dairy manure processing and handling, swine manure processing, irrigation with swine manure, and manure runoff studies.

Tour #3 – The Endres Composting Tour will illustrate their progress with composting dairy manure under a roof and demonstrate topdressing alfalfa fields with compost. Yahara Pride Farms, a farmer-led, not-for-profit conservation organization working to improve soil and water quality, will tour their cover crop plots and demonstrate Low Disturbance manure injection techniques as part of this tour offer.

Tradeshow and vendor exhibits will be open on Tuesday afternoon and evening, featuring an agitation demonstration and educational sessions.

Wednesday, August 23 is another TRADESHOW and DEMO DAY with more educational sessions and field demos, including solid and liquid manure applications, side-dressing demos, and using a dragline in standing corn.

Audience Profile: Who will attend the [Manure Expo](#)?

- Professional manure handlers, applicators and brokers
- Dairy, livestock and poultry producers and professionals
- Handlers of both liquid and solid manures
- Crop consultants and nutrient management specialists
- Compost managers
- Custom operators
- Agricultural support industry
- Extension and agency personnel

Since its inception in 2001, the NAME has been held in Wisconsin, Michigan, Minnesota, Missouri, Ohio, Iowa, Nebraska, and Pennsylvania in the US and Guelph, Ontario, Canada.

North American MANUREXPO

Professionalism in Nutrient Management

Coming to SOUTH DAKOTA in 2018!

South Dakota State University and SDSU Extension have announced that the state will be hosting the 2018 [North American Manure Expo](#) on Wednesday and Thursday, August 15-16, 2018 at the Swiftel Center in Brookings, SD.

SDSU Extension evaluated a number of site locations in southeast South Dakota along the Interstate-29 corridor that could accommodate a potential audience of 1,000+ attendees over a 2-day event.

David Kringen is the water resources field specialist SDSU Extension, and chair of the SD planning committee. "The Brookings site will have room for exhibitors, educational sessions, and machinery demonstrations," David Kringen explained. "A site near Sioux Falls provides an ideal central location for attendees travelling from neighboring states, have airport access, and be in close proximity to the South Dakota feeding industry."

SDSU Extension has also taken a regional approach in the planning and development of the 2018 Expo by inviting the cooperation of the other members of the I-29 Consortium of Universities from the neighboring states of North Dakota, Nebraska, Iowa, and Minnesota. "We feel this multi-state approach will give participants the best possible experience when attending the event," Kringen said.

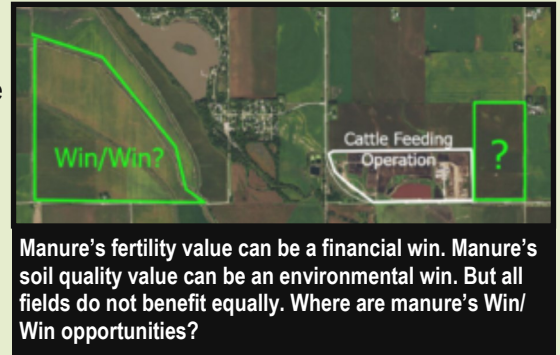
The planning committee has gained a variance by the City of Brookings to apply manure on city-owned ground leased to a local producer. The ground is within walking distance from the Swiftel Center.

Manure & Soil Health: What is the State of the Science?

Reprinted from [Soil Health Nexus](#) blog, February 6, 2017

Can manure be both an economic 'Win' and an environmental 'Win'? What fields provide the best opportunity for Win/Win? What exactly are the environmental and soil health wins associated with manure? Can we test soils so that we better understand the value of manure nutrients and carbon? What are the biological processes in a soil system that benefit from organic fertilizers? These and other questions are the topics a new working group addressing Manure and Soil Health (MaSH) plan to address.

US agriculture has transitioned through two or more generations of crop farmers that have NOT always utilized benefits of manure. The art and science of recycling manure nutrients and carbon has been lost due, in part, to availability of inorganic fertilizers. The recent Confined Animal Feeding Operation regulation of manure management has reacquainted many farms with manure's nitrogen (N) and phosphorus (P) value and risks. Recycling manure N and P in crops is increasingly accepted in most agricultural communities and highly valued and sought after in some.



The carbon in manure is a beneficial element for soils, leading to greater water infiltration, less runoff and erosion, and improved soil drought tolerance.

However, the value of manure's carbon (or organic matter) remains a mystery to many managers of crop and soil systems. The carbon in manure is a beneficial element for soils, leading to greater water infiltration, less runoff and erosion, and improved soil drought tolerance. These advantages are generally connected with changes in soil structure including greater aggregation of soil particles. In addition, manure's properties have been reported as benefiting soil pH, diversity of soil organism diversity, disease suppression, and cycling of soil nutrients.



Fifty to 85% of manure's dry matter is organic material. Organic matter is the energy source essential to a healthy soil microbial system.

disease suppression, and cycling of soil nutrients.

A group of Land Grant University and NRCS professionals has formed a Manure and Soil Health team for the purpose of encouraging a better understanding of the value of manure. With some start up support from the North Central Region Water Network, our group proposes to:

- 1) summarize the current state of knowledge on the role of manure in soil health
- 2) distribute this knowledge to those influencing manure and soil management decisions
- 3) identify future research and education needs to advance our knowledge. We anticipate implementing three endeavors in support of these goals:
 - Complete several comprehensive reviews of MaSH related literature (available late summer 2017);
 - Host web-based roundtables to tap into the current knowledge of researchers and practitioners;
 - Capture and summarize this knowledge through this MaSH blog.

We encourage your attendance of one or more of our live MaSH Roundtables or their archived recordings available in late February. Our hope is that this discussion of Manure and Soil Health will help us better tap into the Win/Win opportunities for manure in our cropping systems. — Rick Koelsch, University of Nebraska-Lincoln; Shelby Burlew, Michigan State University; Mary Berg, North Dakota State University. Funding support from North Central Region Water Network.

The North Central Region [Soil Health Nexus](#) was initiated in 2016 with funding from the North Central Region Water Network. A North Central Soil Health Work Group with representatives from Land Grant Universities across the 12 state region convened to address the challenges of increasing access to soil health research, knowledge, extension and resources. A regional structure was initiated around the three areas of Research, Extension and Outreach, and Resources and Communications. The Nexus/MaSH interactive website serves the communication conduit for each area.

Pond Management

Commentary
from the CAFO Corral

With the warm stretches and cool downs we have experienced, the calendar tells us that the final spring thaw can't be too far away. Existing snow and already saturated soils from some early melts could result in runoff and flooding events again this spring.



NORTH DAKOTA
DEPARTMENT of HEALTH

Now is the time to prevent potential flood-related problems by performing some simple maintenance on parts of your manure management system.

- ☑ Clear snow and ice from pipes, culverts and the solids separator. It is best to remove the snow and ice prior to melting. Salt may be useful to melt ice in structures that are difficult to clear by mechanical means.
- ☑ Remove snow drifts from open diversion ditches to ensure they will flow freely when the melting occurs.
- ☑ Review your operations and maintenance (O/M) plan for any maintenance items unique to your system.

During the spring melt, monitor your pond and record its level regularly. Inspect the diversions and dikes for erosion, particularly those areas that did not have established vegetation last year.

In springs past, the most common cause of overflows was clean water entering the containment area due to overtopping of clean-water diversion dikes. Recently completed projects with bare earthwork sustained the most damage.

If your runoff pond does fill up, it is best to wait to pump it until the water can be applied to dry cropland, hay land or pasture. When possible, a sample of the runoff water should be tested prior to application. Contact your local extension agent for a list



Manure storage facilities such as this containment pond at NDSU's Carrington Research Extension Center need to be protected during a flood. NDSU photo.

Pond Management (Continued from page 10)



An uncontrolled overflow can damage the pond structure. Photo by Chris Augustin.

of laboratories that can analyze manure samples. Runoff water can often be applied up to the infiltration rate of the soil.

If the runoff pond is in immediate danger of overflowing, it is still preferable to control that overflow by pumping, siphoning, or using the designed spillway. An uncontrolled overflow can damage the pond structure.

If pumping a runoff pond is needed to prevent an immediate overflow, steps can still be taken to minimize the impact, including:

- ◆ Don't pump from the very top or bottom of the pond; pull water from the middle.
- ◆ Direct the discharge to an area where it will have the least environmental impact, preferably away from any defined drainage.
- ◆ Spread the runoff water out over as much area as possible, preferably on grass or hay land with vegetation.

Extraordinary measures should be taken to prevent liquid manure storage ponds from overflowing; such discharges can cause severe environmental impacts.

In the event of an overflow or damage from excessive runoff, notify the North Dakota Department of Health, Division of Water Quality, at 701.328.5210. Keep track of the volume and duration of overflow. (The flow rate over a dike can be estimated if you know the depth and width of the overflow.) If you have any questions or concerns, please call the number above or contact us at www.ndhealth.gov/WQ. — Jeremiah Lang, NDDOH

Coming Events

- April 18-21. [Waste to Worth Conference](#) on Livestock and Poultry Environmental Quality, Raleigh, NC.
- April 20. "Lead Local" Training, Stutsman County Extension Office, Jamestown, ND.
- June 15. Crop Management Field School, Carrington Research Extension Center.
- July 18. Field Day, Carrington Research Extension Center.
- Mid-August. Nutrient Management Day, Carrington Research Extension Center.
- August 22-23. [North American Manure Expo](#), Arlington, WI.

Why Farm & Ranch Pickups Aren't Stolen

10. They have a range of about 20 miles before they overheat, breakdown or run out of gas.
9. Only the owner knows how to operate the door to get in or out.
8. It is difficult to drive fast with all the fence tools, grease rags, ropes, chains, syringes, buckets, boots and loose papers in the cab.
7. It takes too long to start and the smoke coming up through the rusted-out floorboard clouds your vision.
6. The Border Collie on the toolbox looks mean.
5. They're too easy to spot. The description might go something like this: The driver's side door is red, the passenger side door is green, the right front fender is yellow, etc.
4. The large round bale in the back makes it hard to see if you're being chased. You could use the mirrors if they weren't cracked and covered with duct tape.
3. Top speed is only about 45 mph.
2. Who wants a truck that needs a year's worth of maintenance, u-joints, \$3,000 in body work, tail-lights and windshield?
1. It is hard to commit a crime with everyone waving at you.

Center Points: Easy as 1-2-3...

The Carrington REC has a weekly blog with updates on what's happening now and information on coming events. Read online at www.ag.ndsu.edu/CarringtonREC or subscribe to receive a weekly reminder and quick link.

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