

SPREADIN' THE NEWS

Spring/Summer 2026

Three Steps to Maximize Nutrient Efficiency with Manure Application

Our weather patterns in northwest and north central Ohio have been variable the last three years. Saturated soils have delayed spring planting and severe summer drought conditions have generated macropores (large cracks in the soil). This weather variability reinforces the need for producers to better understand fertilizer and manure application rates, application timing, and drives home the importance of on-farm and/or custom applicator manure spreader calibration.

What Goes into the Spreader

Obtaining a representative manure sample and submitting it for analysis in advance of manure application should be the top priority of any producer controlling and/or applying manure. That being said, before your manure spreader leaves the shop, take a moment to compare

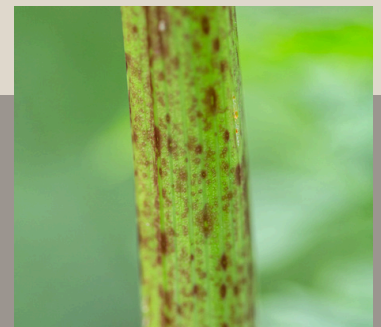
recent soil tests taken within the last 2-4 years with your most recent manure analyses. This simple act will help you better understand which fields need nutrients, which fields will require supplemental commercial fertilizer in addition to manure, and which fields to avoid spreading manure on if soil nutrient levels (particularly phosphorus) are already too high. Knowing the nutrient content of your manure is paramount for nutrient management planning, protecting water quality and safeguarding your pocketbook. Find additional guidance on how to obtain a manure sample and analysis as well as the local SWCD contact for nutrient management planning on the back cover of this edition of Spreadin' the News.

Getting Specific with the Equipment

Now that you know what you're putting into your spreader, it's time to spread it; but how can you tell whether or not you're physically applying too much or not enough? That's where manure spreader calibration comes into play.

Did you know?

Poison hemlock is highly toxic to livestock – particularly to cattle. The woody invasive can cause nervous system paralysis, respiratory failure, and in some cases death. Similar in appearance to Queen Anne's lace, poison hemlock can be identified based on the following criteria: stem with purple spots, leaf shape with a fern-like appearance, and established plant heights reaching eight feet tall. Control poison hemlock in the spring with an herbicide application or by mowing after its establishment. Remove livestock from pastures where poison hemlock is found until eradicated and avoid feeding any forage that may contain the invasive.



Manure spreader calibration is how your manure application rates are determined. The equipment's speeds and settings along with accounting for overlap in spreading patterns across a given field, all play a factor.

Manure Spreader Calibration Types

There are two kinds of manure spreader calibration methods: swath/load-area method or tarp/weight-area method. The swath/load-area method provides the best result for liquid manure applicators as it requires a full load of liquid manure to be spread and then measured across the land area via a measuring wheel. The tarp/weight-area method is reserved for solid manure applicators, which involves measuring the amount (weight) applied over a small, measured area (plastic tarp). The application rate is then determined by dividing the amount of manure collected on the tarp by the size of the collection area/tarp. Always remember to calibrate your manure spreader (liquid or solid) on a field where manure will typically be applied. For both liquid and solid manure applications, PTO and tractor speeds, gearbox settings, gate openings, operating pressures, spread widths and overlaps are important as each factor directly affects the manure application rate. Regardless of whether you make one change or a combination of changes on your equipment, the calibration process should always be performed to achieve the best application result.

How to Further Calculate Your Rates

We all know that it isn't a perfect science, sometimes we overfill the solid spreader and other times we don't have enough to consider a tanker a "full load." Manure spreader weight as well as the weight of the manure itself are two factors that cannot be overlooked. Use the manufacturer's ratings or weigh your solid spreader or liquid tanker to determine your spreaders empty weight. It is recommended at least three typical loads of manure in the spreader or tanker be recorded by obtaining an average weight of the full loads, subtracting the weight of the empty spreader or tanker, and converting the final number to tons or gallons (divide by 2,000 for tons, or divide by 8.3 for gallons). It's important to remember solid

manure weight is variable due to the moisture content, changing across the operation depending on the amount of bedding being utilized at a specific time, whereas liquid manure is more consistent. Invest not only in your manure spreader calibration, but the numbers that are behind it, an investment in precision is an investment in your operation and the utilization of your nutrients.

The Rules Don't Lie

When land applying liquid, solid or both types of manure consider the following and do not apply in the Western Lake Erie Basin (WLEB) watershed when:

- Soils are frozen
- Soils are snow-covered
- The top two inches of soil are saturated
- When there is a greater than 50% chance of rainfall of more than 0.5" within 24 hours of the application of manure
- When there is a greater than 50% chance of rainfall of more than 1" within 12 hours of the application of commercial fertilizer

In order to remain in compliance with the H2Ohio program and the USDA-NRCS 590 nutrient management standard, a producer should not exceed rates of 13,500 gallons of liquid manure per acre or 10–12 tons of solid manure per acre in a single application. Remember to keep detailed application and weather forecast records for at least five years. It is also important to remember to utilize setback distances and maintain good neighbor relations. For more information on manure and fertilizer application, assistance with calibrating your manure spreader, or if you need to submit a manure sample for analysis, contact Nutrient Management Technician, Hannah Ziegler.



Manure Spreader Calibration Record Sheet

Swath/Load-Area Method

Spreader Identification			
Date			
1.) Determine the capacity of the spreader (use gallons for liquid manure and tons for solid manure)			
a. Spreader capacity			gallons or tons
2.) Spread one full load in a rectangle pattern			
Forward speed, gear, or throttle setting			
PTO speed or setting			
Spreader gate opening setting			
3.) Measure the coverage area			
	Trial 1	Trial 2	Trial 3
a. Spread area width	feet	feet	feet
b. Spread area length	feet	feet	feet
4.) Calculate the area covered			
a. Spread area (3a x 3b)	ft ²	ft ²	ft ²
b. Spread area (4a / 43,560)	acres	acres	acres
5.) Calculate the manure application rate			
a. Application rate 1a / 4b)			gallons or tons
6.) Average each of the calibration trials to determine the final application rate			
Final calibrated application rate (average of trials in 5a)			gallons or tons

Crawford SWCD has a measuring wheel for rent!
Call the office for availability and inquiry of other rental items.



Manure Spreader Calibration Record Sheet

Tarp/Weight-Area Method

Spreader Identification			
Date			
1.) Measure tarp surface area. Weigh the empty tarp and record under 3a below. Spread and secure the tarp or plastic sheet in the field			
a. Tarp surface area:	width x	length =	ft ²
2.) Spread manure over the center of the tarp and on each side of the tarp at the normal overlap spacing			
Forward speed, gear, or throttle setting			
PTO speed or setting			
Spreader gate opening setting			
3.) Fold and weigh the tarp (and weighing container) with an accurate set of spring-tension or platform scales			
	Trial 1	Trial 2	Trial 3
a. Empty weight	lbs	lbs	lbs
b. Gross weight with manure	lbs	lbs	lbs
c. Net weight (3b-3a)	lbs	lbs	lbs
4.) Calculate the manure application rate			
a. Application rate (3c / 1a)	lbs/ft ²	lbs/ft ²	lbs/ft ²
b. Application rate (4a x 21.8)	tons/acre	tons/acre	tons/acre
5.) Average each of the calibration trials to determine the final application rate			
Final calibrated application rate (average of trials in 4b)			tons/acre



HANDLING LIVESTOCK & YOUR PASTURE

A late-summer animal husbandry clinic and pasture walk organized by Crawford and Wyandot SWCD in collaboration with local producers and industry experts.



SOUTH OF JOE & DEANN FUNKHOUSER'S FARM

19459 State Highway 37
Upper Sandusky, OH 43351

 5:30 p.m. to 8:30 p.m.

 Thursday, August 6, 2026

 RSVP by August 4, 2026

LEADING THE DISCUSSION:

- John Yost, PhD, The Ohio State University Extension, CFAES-Wooster (ATI)
- Hannah Ziegler, Nutrient Management & Grazing Technician, Crawford and Wyandot SWCD

TOPICS WILL INCLUDE:

- Animal husbandry as it relates to moving livestock across paddocks and within barns
- Rotational grazing strategies for all levels
- How to manage pastures during droughts and floods
- Forage species for warm and cool season grass pastures
- AND SO MUCH MORE!

A light meal and materials for your reference will be provided.



Thank you to our meal & water sponsors:
Wyandot County Cattlemen's Association and Shane Coppler, Fort Royal Farms (Carey, OH)!



NUTRIENT MANAGEMENT
AND GRAZING TECHNICIAN

Hannah Ziegler

To RSVP, contact Crawford SWCD at 419-562-8280 ext. 3 or Wyandot SWCD at 419-731-0020.

How to Obtain a Manure Sample & Analysis

1. Ensure personal safety
2. Collect several cores or samples and place in a **CLEAN PLASTIC** bucket
3. Mix the samples together and pull a single sample from the bucket
4. Promptly deliver the sample to Crawford SWCD with payment for testing or ship sample on your own during the business week
5. Receive the manure analysis results



Sample Sizing



At least a “Gatorade-sized” (32-ounce) bottle sample if collecting liquid manure



At least a “sandwich bag-sized” sample if collecting solid manure



Serving the Soil and Water Conservation Districts
in Crawford, Marion and Wyandot Counties.

*If you would like to receive this newsletter in
electronic format, please contact Hannah Ziegler.*

hannah.ziegler@oh.nacdn.net

(419) 562-8280 ext. 3

Nutrient Management Technician

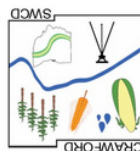
Hannah Ziegler

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Crawford Soil & Water Conservation District