

# Fertilizer Recertification 2022

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THE OHIO STATE UNIVERSITY  
EXTENSION



# Overview

- **Fertilizer Regulations**
- **Recordkeeping**
- **Weather Data**
- **Manure Analysis**

# Agricultural Fertilizer Applicator Laws

- Senate Bill 150 – 2014
  - Statewide, established the Fertilizer Applicator Certification Program
- Senate Bill 1 – 2015
  - The application restriction law for the Western Lake Erie Basin
  - Statewide: Anybody applying manure from concentrated animal feeding facility must have fertilizer certification



# Fertilizer Certification is Required

by September 2017 if you:

- SB 150
  - Apply fertilizer to more than 50 acres of agricultural land owned primarily for sale
  - CCA's and CLM's need only provide proof of training to certify application, exempt from the education requirement
  - No difference in requirements for fertilizer applicators

**Now What???**  
**.....Recertification every 3 years!**

**Recertify Every 3 Years by attending a 1 hr. training and any appropriate fees billed through ODA**

# Fertilizer Certification is **Not Required** if you:

- Apply Fertilizer to **less than 50 acres**
- Produce a crop primarily for livestock feed
- Use only start-up fertilizer through the planter
- Hire a **custom applicator** to apply fertilizer for you

# Direct Supervision

Uncertified applicators may apply fertilizer if acting under the instruction and control of a certified fertilizer applicator

## The applicator must be:

- Within 25 miles or 2 hours travel of certificate holder
- Employed by the same business or farm as the Certified Applicator, or an immediate family member
- Instructed where, when, and how to apply the fertilizer



## Western Lake Erie Basin Fertilizer and Manure Restrictions

1. **Fertilizer application restrictions:** In the western basin of Lake Erie, a person may not apply fertilizer (defined as nitrogen or phosphorus) under any of these conditions:
  - a. On snow-covered or frozen soil
  - b. When the top 2 inches of soil are saturated
  - c. When the local weather forecast for the application area contains greater than a 50% chance of precipitation exceeding 1 inch in a 12-hour period

**Exceptions-** the above restrictions do not apply if the fertilizer is:

- a. Injected into the ground
- b. Incorporated within 24 hours of a surface application
- c. Applied onto a growing crop

2. **Manure application restrictions:** In the western basin of Lake Erie, a person may not apply manure (defined as animal excreta) under any of these conditions:
  - a. On snow-covered or frozen soil
  - b. When the top 2 inches of soil are saturated
  - c. When the local weather forecast for the application area contains greater than a 50% chance of precipitation exceeding 0.5 inch in a 24-hour period

**Exceptions-** the above restrictions do not apply if the manure is:

- a. Injected into the ground
- b. Incorporated within 24 hours of a surface application
- c. Applied onto a growing crop
- d. Or if, in the event of an emergency, the chief of the division of soil and water resources provides written consent and the application is in accordance with NRCS practice standard code 590.

**\*\*Important note:** Even if all above guidelines are followed, any manure discharge or fishkill event is not tolerated and may result in penalties and fines. In addition to these restrictions, NRCS 590 standards and any additional requirements for manure from a CAFO must be followed.

Type of Sensitive - Setback Area	Manure Application	
	Surface Application	Incorporation or Direct Injection
Residences / Private Wells down slope from the application area.	100 ft <sup>1</sup>	100 ft
Sinkholes	300 ft	100 ft
Pond or Lake	100 ft. at a minimum 35 ft of the 100 must be Vegetative Barrier <sup>2</sup>  Or 300 ft	35ft. Vegetative Barrier
- Streams - Ditches - Surface Inlets	35 ft Vegetative Barrier or 50% residue cover at time of application Or 100 ft	None
Grassed Waterway	35 ft	None
Field Surface Drains	35 ft <sup>3</sup>	None
Public Wells	300 ft	100 ft
Developed Springs down slope from the application area.	300 ft	300 ft
Public Surface Drinking Water Intake	300 ft	300 ft

1. All listed measurements are from top of bank.
2. Vegetative Barriers are permanent vegetation consisting of grass, grass/legume mix, trees/shrubs, or trees/shrubs and grass/legumes.
3. Setback requirement for field surface drains are only required if the criteria listed Nutrient application Timing and Placement section are not met. When this criterion is not met the applications of manure must abide by this 35 ft setback distance.



# **Questions on Fertilizer Regulations?**

# Fertilizer Applicator Records

## Required Information:

- The name of the individual who applied the fertilizer
- The name of the fertilizer certificate holder
- The date of application
- The place of application- Location (Field ID, farm)
- The number of acres applied
- The rate of application of manure/fertilizer (ex: lbs/A)
- The total amount of manure/fertilizer applied, by weight or volume
- The analysis of manure/fertilizer (such as 11-52-0 or 30-40-40/ton)

# Required Information (cont.)

- The soil conditions at the time of the application
- The type of application method (surface applied, incorporated, injected, etc.)
- The weather conditions at the time of the application, including temperature and precipitation
- The weather forecast for the *day following application*
- **For surface applications only:** Was the land *frozen or snow covered* at the time of application?

# Time Requirements for Fertilizer Recordkeeping

- Record the information **within 24 hours of application** (same day)
- Applicator working under direct supervision must submit record to the certificate holder within **10 days**
- Certificate holders must submit record to farm operators within **30 days**
- No set form required- electronic or paper records accepted
- Must keep records for **3 years**
  - Employers of certificate holders may elect to keep the records
- Required to submit records to ODA upon request

## Record Keeping for Agricultural Fertilizer Certification-FAQ

**What records are required to be kept by Agricultural Fertilizer Applicator Certificate holders?**

All fertilizer certificate holders shall maintain fertilizer application records. For each application of fertilizer applied for the primary purpose of agricultural production, the certificate holder or the applicator acting under their instructions and control shall document the following information within twenty-four hours of application:

- (1) The name of the individual who applied the fertilizer;
- (2) The name of the certificate holder, if applicable;
- (3) The date of the application of fertilizer;
- (4) The place of application of fertilizer;
- (5) The number of acres on which fertilizer is applied; ★
- (6) The rate of application of fertilizer;
- (7) The total amount of fertilizer applied, either by weight or volume; ★
- (8) The analysis of the fertilizer applied;
- (9) The soil conditions at the time of the application;
- (10) The type of application method (soil injected, incorporated, surface, etc.);
- (11) The weather conditions at the time of application, including temperature and precipitation;
- (12) The weather forecast for the day following application; and
- (13) For surface application only, whether the land at the time of application was frozen and/or snow covered.

**New  
required  
information**

# Ohio Requirements for Recordkeeping

## For certificate holders

Ohio Agricultural Fertilizer Applicator Recordkeeping Form

Maintain records for 3 years from date of application									
<b>Who:</b> Name of certificate holder:									
Name of Applicator (if different than above):									
<b>When:</b> (mm/dd/yyyy)									
Application date									
<b>Where:</b>									
Location									
<b>What:</b>									
Fertilizer analysis									
Rate applied									
Number of acres applied									
Total amount of fertilizer applied									
Application method									
<b>Application conditions:</b>									
Soil conditions									
Air temperature									
Precipitation									
Soil frozen or snow covered (Y/N)									
<b>Weather forecast:</b>									
24 hour forecast following application									
<b>Notes:</b>									

Agricultural Fertilizer Applicator Recordkeeping Form (Tentative until Rules are adopted)				
Maintain records for 3 years from the date of application.				
<b>Who - Name of Certificate Holder:</b>				
Name of Applicator (if different than above):				
<b>Application Date</b>		<b>When:</b> (mm/dd/yyyy)		
<b>Where:</b>				
Location (field ID, Farm ID)				
<b>Application Details</b>				
Fertilizer analysis				
Fertilizer Rate (lbs. fertilizer/A)				
Total fertilizer applied or total acres treated				
Application Method (surface-applied, soil- injected, incorporated etc)				
<b>Conditions during Application</b>				
Soil Conditions (moisture)				
Soil frozen or snow covered? (Y/N)				
Air Temperature				
Precipitation Conditions				
<b>Forecast after application</b>				
24 hour forecast				

<https://nutrienteducation.osu.edu/recordkeeping>



# **Questions on Fertilizer Records?**

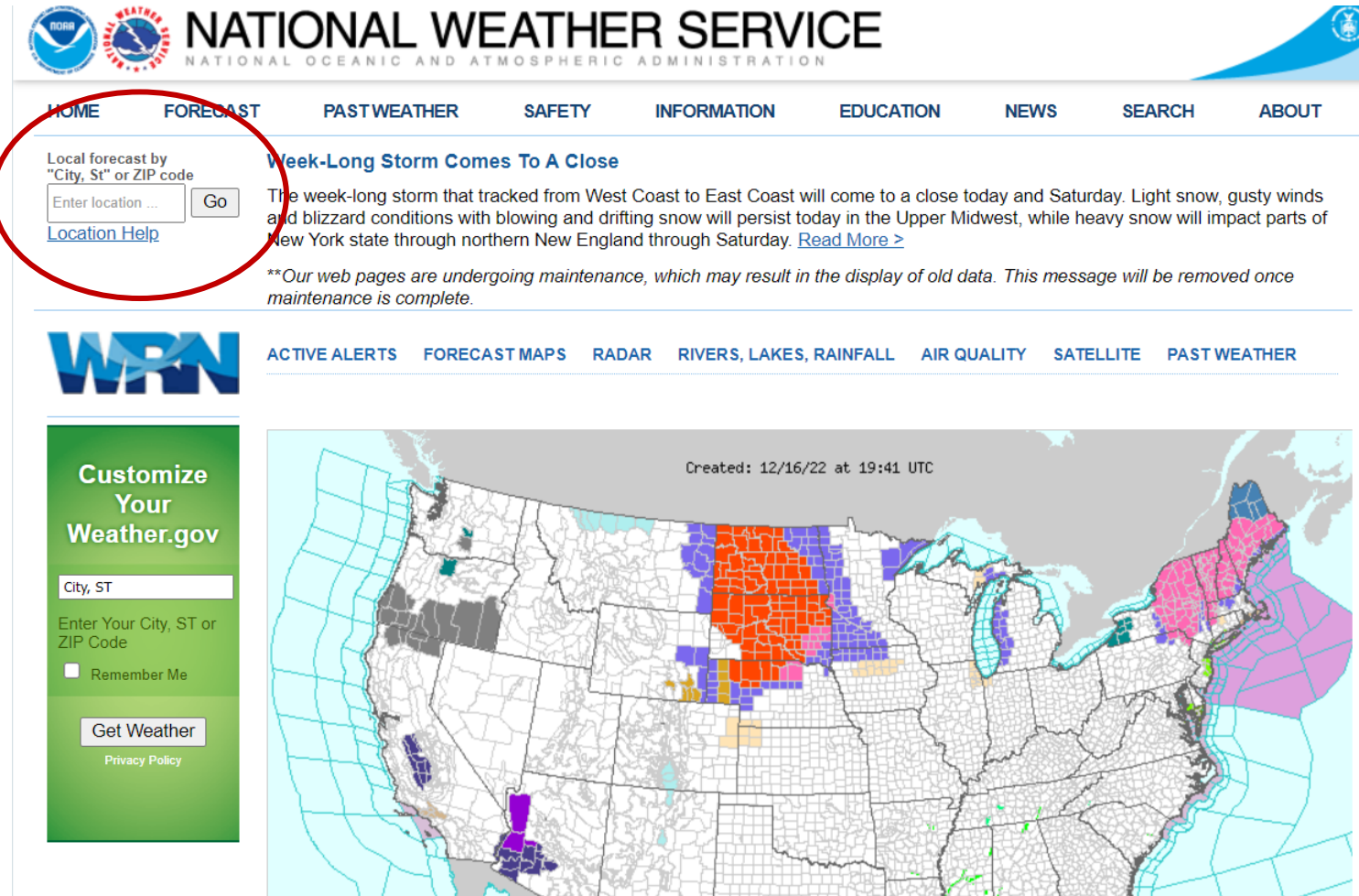
# Options for Gathering Weather Data:

1. National Weather Service (NWS) Website
2. Ohio Nutrient Management Recordkeeper (OnMRK) App

# National Weather Service Website

<https://weather.gov>

Enter Zip Code



The screenshot shows the National Weather Service website interface. At the top, the NOAA and NWS logos are displayed alongside the text "NATIONAL WEATHER SERVICE" and "NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION". A navigation bar includes links for HOME, FORECAST, PAST WEATHER, SAFETY, INFORMATION, EDUCATION, NEWS, SEARCH, and ABOUT. The "FORECAST" section is active, showing a "Local forecast by 'City, St' or ZIP code" with an input field labeled "Enter location ..." and a "Go" button. A red circle highlights this input field, and a red arrow points from the "Enter Zip Code" text to it. Below the input field is a "Location Help" link. To the right, a headline reads "Week-Long Storm Comes To A Close" with a sub-headline and a "Read More" link. A maintenance notice is displayed below the headline. A secondary navigation bar includes links for ACTIVE ALERTS, FORECAST MAPS, RADAR, RIVERS, LAKES, RAINFALL, AIR QUALITY, SATELLITE, and PAST WEATHER. The "FORECAST MAPS" link is highlighted. Below this, a "Customize Your Weather.gov" sidebar contains a "City, ST" input field, a "Remember Me" checkbox, and a "Get Weather" button with a "Privacy Policy" link. The main content area features a map of the United States with a color-coded forecast overlay, titled "Created: 12/16/22 at 19:41 UTC".

# Hourly Weather Graph

## ZONE AREA FORECAST FOR FULTON COUNTY OH

[Forecast Discussion](#)  
[Printable Forecast](#)  
[Text Only Forecast](#)

[Hourly Weather Forecast](#)  
[Tabular Forecast](#)

[Graphical Forecasts](#)  
[County Forecasts](#)  
[Forecast Beyond 7 Days](#)  
[Storm Prediction Center](#)  
[Local Storm Report](#)

[Computer Model Forecast Guidance](#)  
[Climate Information](#)  
[Temperature & Precipitation](#)  
[Summary](#)  
[NOAA Weather Radio](#)  
[Public Information Statement](#)

[Air Quality Forecasts](#)  
[International System of Units](#)

[Hydrologic Summary](#)  
[Rivers](#)  
[Marine Weather](#)  
[Aviation Weather](#)  
[Fire Weather](#)

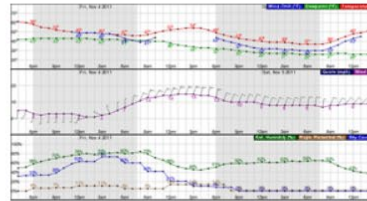
**Last Update:** 1:44 pm EST Dec 19, 2022  
**Forecast Valid:** 2pm EST Dec 19, 2022-6pm EST Dec 25, 2022  
[Forecast Discussion](#)  
[KML](#) [XML](#)

## Additional Resources

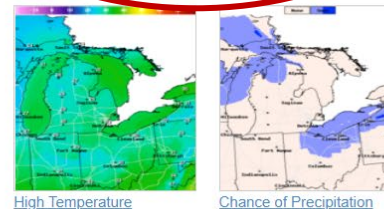
### Radar & Satellite Image



### Hourly Weather Forecast



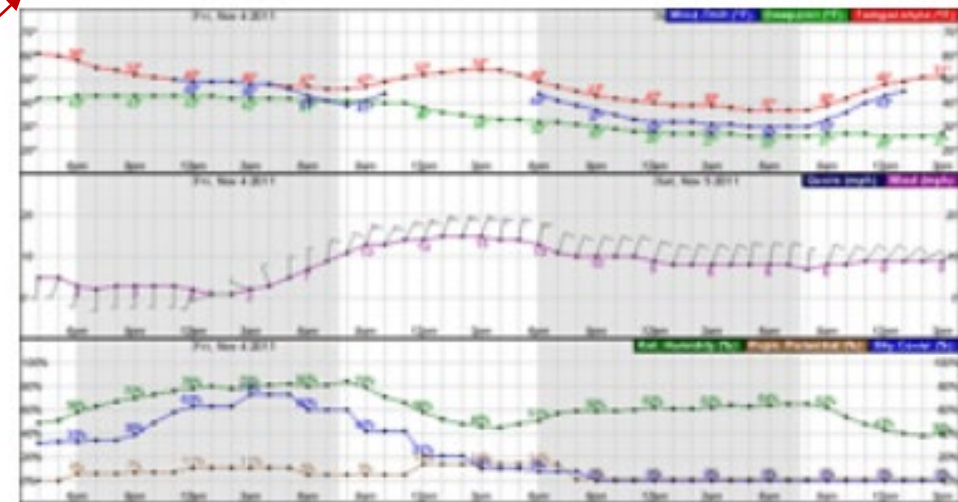
### National Digital Forecast Database



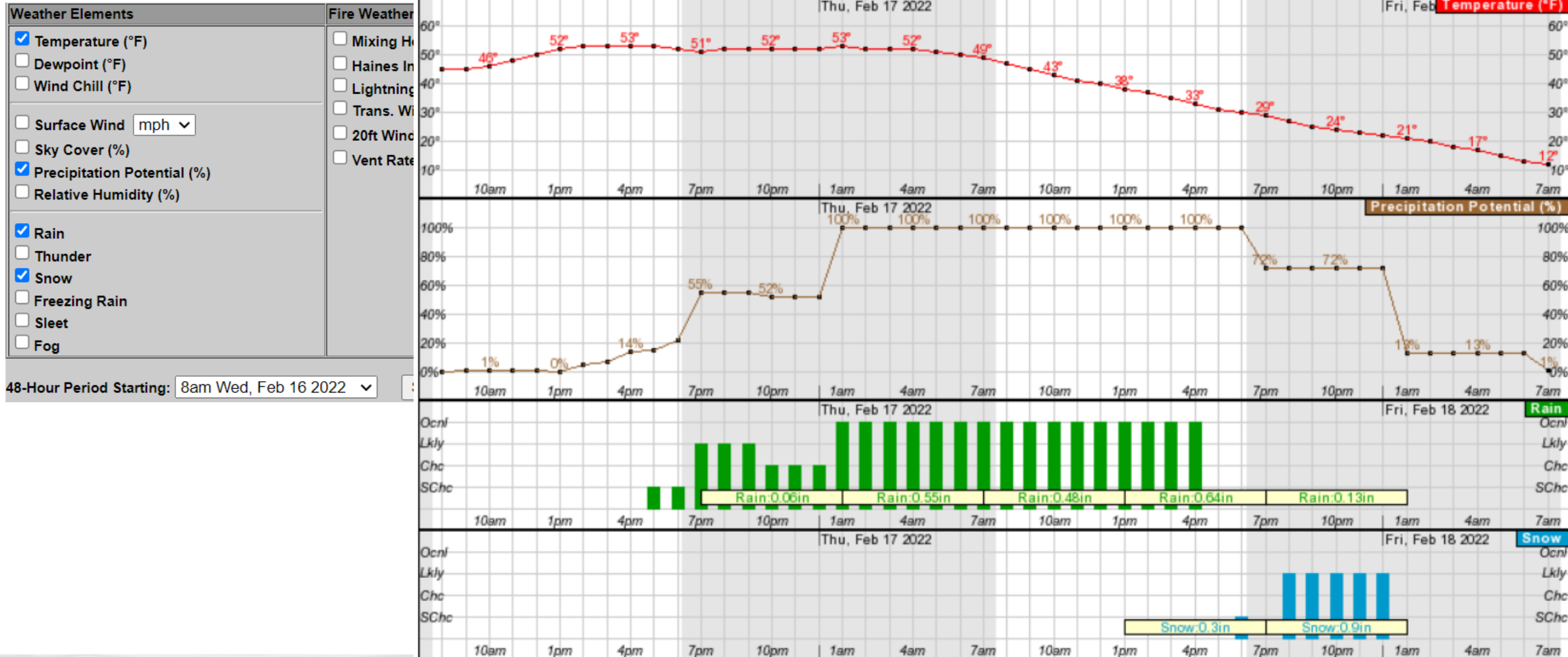
## Radar & Satellite Image



## Hourly Weather Forecast

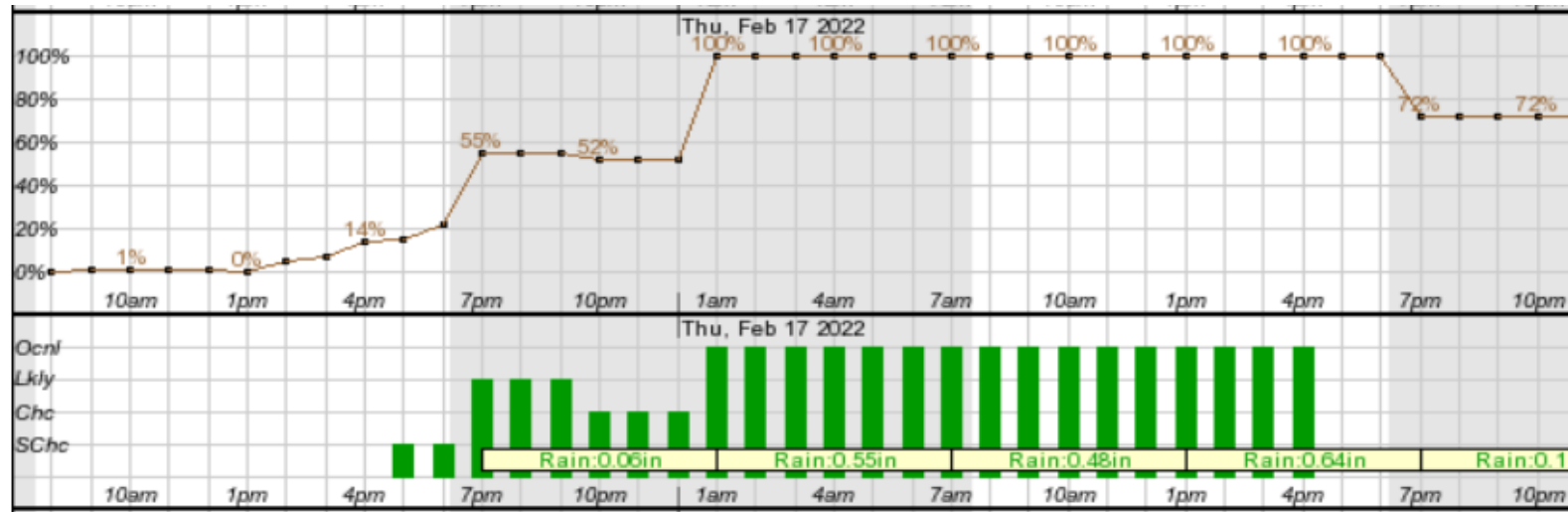


# Example:





# Example:



% Precipitation  
Possible

Period Precipitation  
is possible

## For Fertilizer Application:

Chance of precipitation in the next 12 hours: **100%**

Forecasted amount of precipitation in the next 12 hours: **approx. 1.73 inches**

Forecast is **not** acceptable to proceed with fertilizer application. If it were acceptable, be sure to Print a copy of the forecast for your records.

## For Manure Application:

Chance of precipitation in the next 12 hours: **100%**

Forecasted amount of precipitation in the next 12 hours: **approx. 1.73 inches**

Forecast is **not** acceptable to proceed with fertilizer application. If it were acceptable, be sure to Print a copy of the forecast for your records.

Ensure that practice (setbacks, rates, information, incorporation, etc.) are being followed to prevent manure from ending up in waterways.

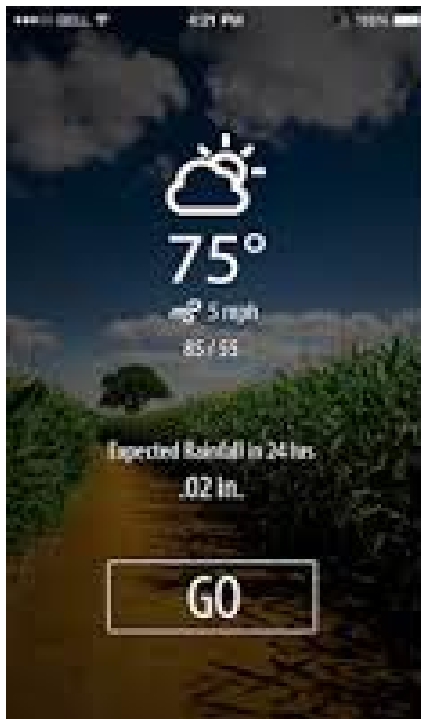
You would still be liable for any manure discharge/ensuring fish kills



# OnMARK Online App

Go to [ONMRK.com](http://ONMRK.com) to set up the app

- Contains all the required items for certified fertilizer applicators

A screenshot of the OnMARK app's form for completing fertilizer application information. The form has a green header with 'Back' and 'Halt / Wait' buttons. The title is 'Complete the following information'. The form fields are: Start Date (01/01/2015), End Date (01/01/2015), Fert Type (Potash / 002), Soil Cond. (Normal), How Applied (Broadcast), Amount (2.3 lbs), and Acres (10.1 ac). A 'Complete' button is at the bottom.A screenshot of the OnMARK app's 'Add New Application' screen. It has a green header with '< Back' and 'Back 60' buttons. The title is 'Conditions are Acceptable'. The weather section shows '78°' and '9 mph ESE'. Below this is a section for 'Add New Application' with 'Reset Form' and 'Cancel' buttons. A purple box contains the text: 'If your application takes longer than one day, please log a new application on the following day.' At the bottom, there is a section for 'Application Type (Check One)' with radio buttons for 'Farms', 'Reports', and a settings icon.

# Note your applicator ID Key

Welcome, Sarah Noggle

Certified Applicator ID: 123456

WHAT WOULD YOU LIKE TO DO?

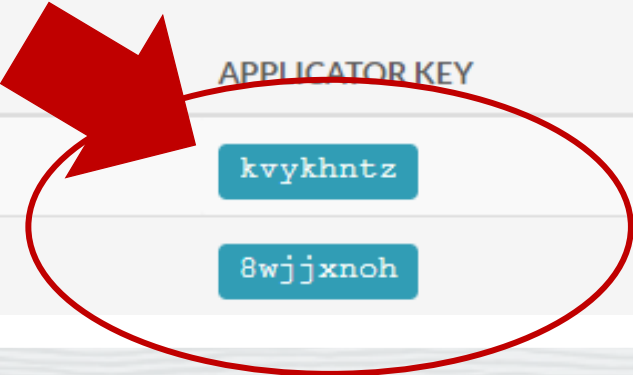
You can manage your Farms, Fields, and Applications, and Applicators from the Main Menu.

READY TO LOGIN ON YOUR MOBILE DEVICE?

Each applicator should use their own "**Applicator Key**". This way, you can automatically track who logged what application.

Here are your applicators:

NAME	APPLICATOR KEY
Sarah Noggle	kvykhntz
Joe Q. Public	8wj jxnoh



# Download to Excel for an audit on ONMRK Records

Clipboard		Font		Alignment		Number		Styles								Cells		Editing	
A14		fx																	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q		
1	<u>Date of Application</u>	<u>Certificate Holder</u>	<u>Applicator</u>	<u>Application Type</u>	<u>Farm Name</u>	<u>Field Name</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Fertilizer Name</u>	<u>Analysis</u>	<u>n</u>	<u>p</u>	<u>k</u>	<u>Application R</u>	<u>Application Method</u>	<u>Soil Conditions</u>	<u>Inc within 24 Hours</u>	<u>App</u>	
2	1/26/2016 17:16	Sarah Noggle	Sarah Noggle	fertilizer	OSU Extension Paulding	Sarah	41.08	-84.57	MAP	11-52-0	11	52	0	100 lbs./ac	Incorporated band - dry	Dry	No		
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

# FARM App Online

[farm.bp.crc.osu.edu](http://farm.bp.crc.osu.edu)

- Can only save **5 zip codes** for free
- Costs \$1 per field after 5, with a minimum of 10 fields
- Recommend you pick fields to look at based on zip code

## FARM | Field Application Resource Monitor

[Sign In](#) [Statewide Condition Map](#) [Tutorial](#)



FARM is a **real-time and historical climate** information tool for fertilizer and manure application.

[View as a Guest](#)

[Create User Profile](#)

[Returning User](#)

Welcome to the **Field Application Resource Monitor (FARM)**. Water quality is important to all Ohioans and we all impact our watersheds. In recent years, Ohio farmers have taken significant positive steps toward limiting the negative impacts on water quality that come from the loss of sediment and nutrients. **FARM** allows users to define their locations of interest and receive 12- and 24-hour precipitation forecasts to aid in the application of fertilizer, manure, and/or pesticides. **FARM** also utilizes a database of historical forecasts allowing users to search previous dates. Users can choose to create an account to track multiple fields, explore statewide conditions in quick-view, and sign-up to receive email alerts (text alerts coming soon).

*This project is made possible through a Connect and Collaborate Grant, a program supporting innovative and scholarly engagement programs that leverage academic excellence of The Ohio State University in mutually beneficial ways with external partners.*



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State Climate Office of Ohio (SCOO)  
Byrd Polar and Climate Research Center  
108 Scott Hall  
1090 Carmack Rd



# Fairgrounds Edit



Tiles © Esri, Labels © weatherUSA, Map data © OpenStreetMap contributors



Fertilizer



Manure



50% chance of **0.96"** of precipitation in **12 hours**

50% chance of **1.10"** of precipitation in **24 hours**

 Snow or ice is possible. Check the forecast before proceeding.

Thu  
Freezing Rain



50° / 10°  
100%

Fri  
Snow



28° / 15°  
0%

Sat  
Chance of Snow



22° / --  
0%

# ODA's Applicator Forecast

[agri.ohio.gov/applicator-forecast](http://agri.ohio.gov/applicator-forecast)



AGRICULTURE  
IN OHIO

SAFEGUARDING  
ANIMALS & PLANTS

PROTECTING  
CONSUMERS

CONSERVING  
RESOURCES



Help



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Divisions / Plant Health / Resources / Ohio Applicator Forecast



WELCOME

ABOUT US

NEWS & EVENTS

RESOURCES

QUESTIONS

LICENSES

## Ohio Applicator Forecast



Ohio Applicator Forecast

Using the Ohio Applicator Forecast

About the Forecast

Frequently Asked Questions

Share this



### External Resources

[NWS Summary page](#)



# Ohio Nutrient Applicator Forecast

Ohio D

Today's Risk

Tomorrow's Risk

Day 3 Risk

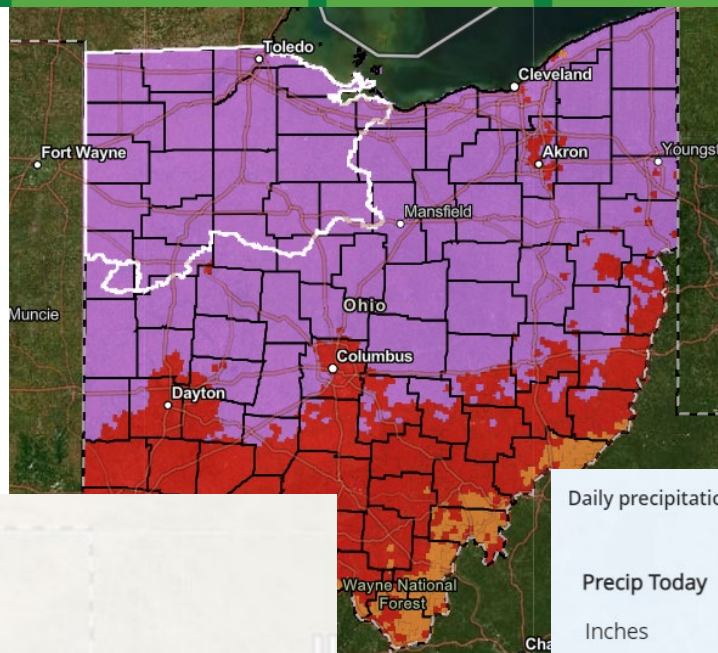
Today's Precip

Tomorrow's Precip

Day 3 Precip

Average Soil Moisture

Average Soil Temp



## Risk Today

### Runoff Risk

Risk with Winter Conditions

Winter Conditions

Severe

Moderate

Low

No runoff expected (clear)

Daily average estimated soil saturation from the surface to 10" depth

## Avg Soil Sat

%

76 - 100

51 - 75

26 - 50

0 - 25

Daily precipitation estimate (midnight to midnight)

## Precip Today

Inches

5.01 - 10.00

2.51 - 5.00

2.01 - 2.50

1.51 - 2.00

1.01 - 1.50

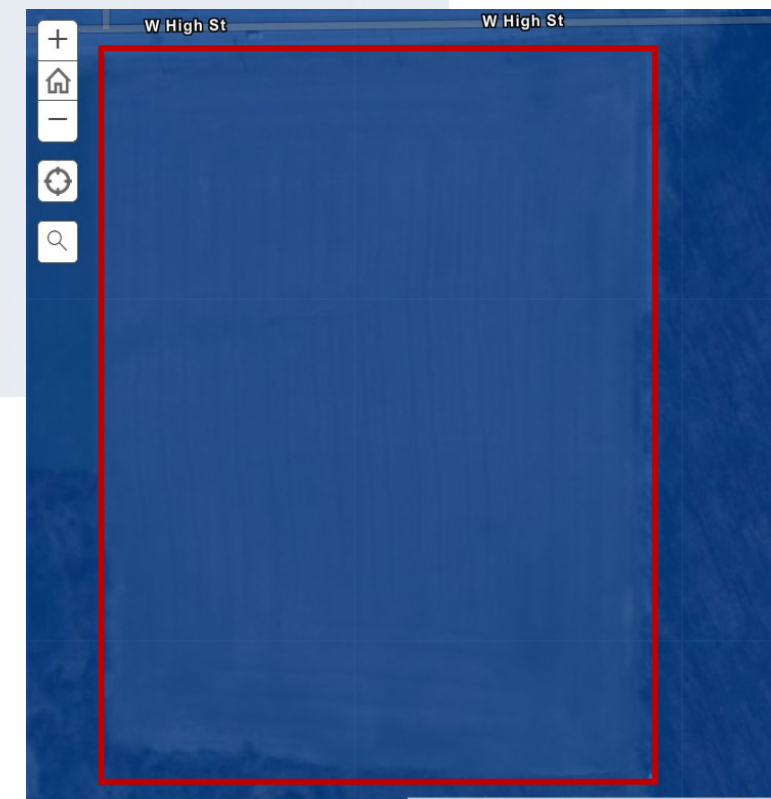
0.76 - 1.00

0.51 - 0.75

0.26 - 0.50

0.11 - 0.25

0.00 - 0.10



OHIO STATE UNIVERSITY EXTENSION

# **Questions on Weather Data?**

# **Reading a Manure Analysis**

## BROOKSIDE LABORATORIES, INC.

\*\* MANURE ANALYSIS REPORT \*\*

Hancock County Extension Office  
7868 CR 140 Suite B  
Findlay, OH 45840

File Number: 40751  
Date Received: 06/02/2017  
Date Reported: 06/06/2017

Submitted By: Home Office

Lab Number 5060  
Description ~~5060~~ 17

36-12-30/ 1000 gal  
180-60-150/ 5000 gal

	% Dry Basis	% Wet Basis	lbs/1000gal	
Moisture		97.24	8346.7	
Mineral Matter	44.20	1.22	104.72	
Lost By Ign (Org M+)	55.80	1.54	132.19	
Total Nitrogen	15.91	0.439	37.68	←
Ammonium-N (NH <sub>4</sub> -N)	15.18	0.419	35.97	←
Nitrate-N (NO <sub>3</sub> -N)		< 0.010		
Organic-N	0.73	0.020	1.72	←
Phosphorus (P)	2.28	0.063	5.41	
Phos. as (P <sub>2</sub> O <sub>5</sub> )	5.22	0.144	12.36	
Potassium (K)	10.47	0.289	24.81	
Potassium as (K <sub>2</sub> O)	12.61	0.348	29.87	
Calcium (Ca)	1.63	0.045	3.86	
Magnesium (Mg)	1.09	0.030	2.58	
Sodium (Na)	5.07	0.140	12.02	
Sulfur (S)	1.20	0.033	2.83	

	ppm Dry Basis	ppm Wet Basis	lbs/1000gal
Boron (B)	167.39	4.62	0.040
Iron (Fe)	2235.51	61.70	0.530
Manganese (Mn)	324.64	8.96	0.077
Copper (Cu)	384.06	10.60	0.091
Zinc (Zn)	1496.38	41.30	0.355

Beef Pen-Pack

% Dry  
Basis% Wet  
Basislbs/  
Ton

Moisture		69.24	1384.80
Mineral Matter	15.27	4.70	94.00
Lost By Ign (Org M+)	84.73	26.06	521.20

<u>Total Nitrogen</u>	<u>2.77</u>	<u>0.851</u>	<u>17.02</u> ←
Ammonium-N (NH <sub>4</sub> -N)	0.37	0.114	2.28 ←
Nitrate-N (NO <sub>3</sub> -N)		< 0.010	
Organic-N	2.40	0.737	14.74 ←
Phosphorus (P)	1.04	0.320	6.40
Phos. as (P <sub>2</sub> O <sub>5</sub> )	2.38	0.732	14.64
Potassium (K)	2.79	0.858	17.16
Potassium as (K <sub>2</sub> O)	3.36	1.034	20.68

2-15-21 lbs/ton  
20-150-210 lbs/ 10 tons

Calcium (Ca)	1.80	0.554	11.08
Magnesium (Mg)	0.66	0.203	4.06
Sodium (Na)	0.56	0.172	3.44
Sulfur (S)	0.87	0.268	5.36

ppm Dry  
Basisppm Wet  
Basislbs/  
Ton

# **Questions on Manure Analysis**



# Composting Cattle Manure for Use on Corn

Eric Richer, Field Specialist, Farm Management

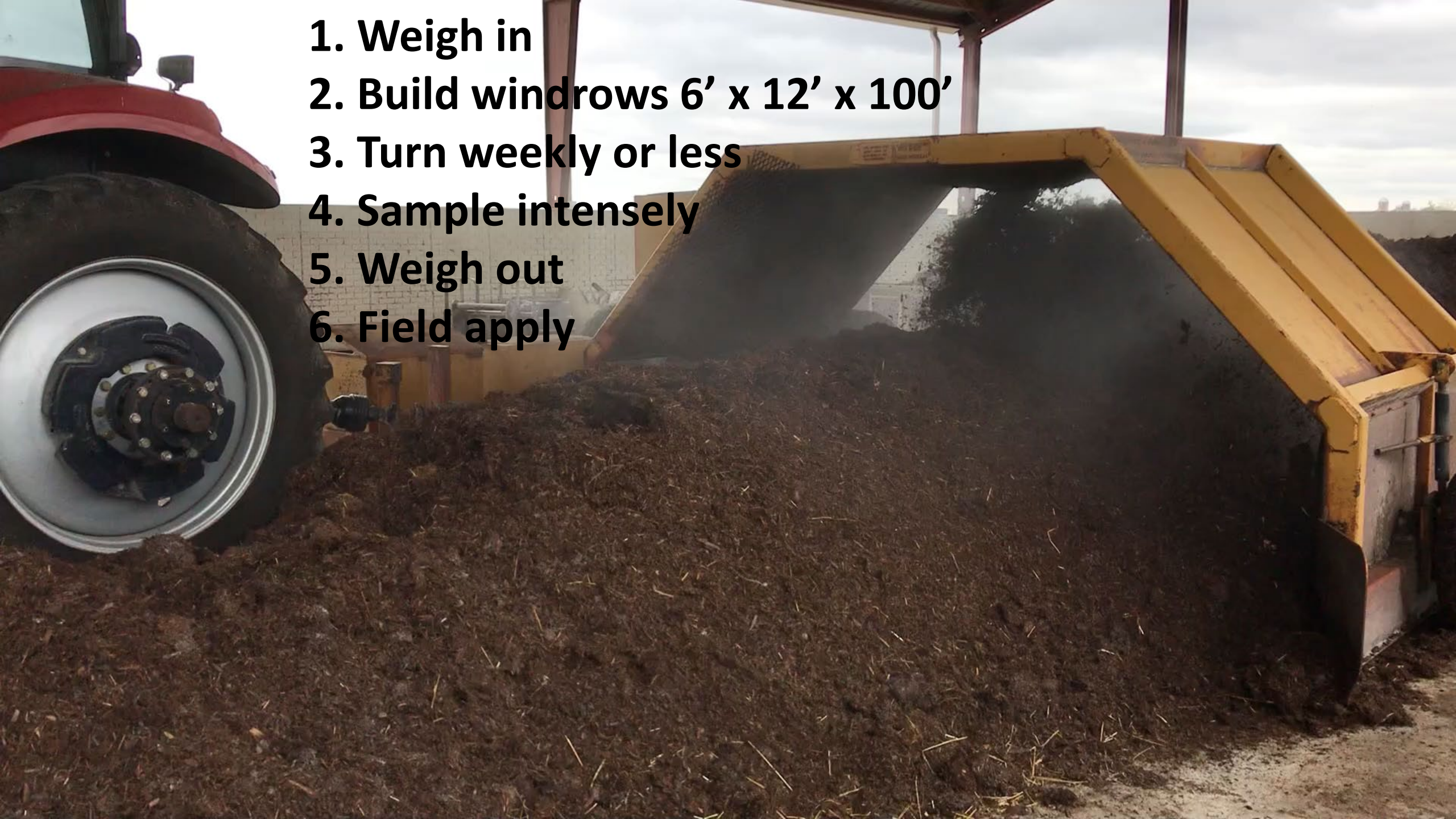
Courtney Krieger, Water Quality Extension Associate

Glen Arnold, Field Specialist, Manure Nutrient Systems



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- 
- 1. Weigh in**
  - 2. Build windrows 6' x 12' x 100'**
  - 3. Turn weekly or less**
  - 4. Sample intensely**
  - 5. Weigh out**
  - 6. Field apply**

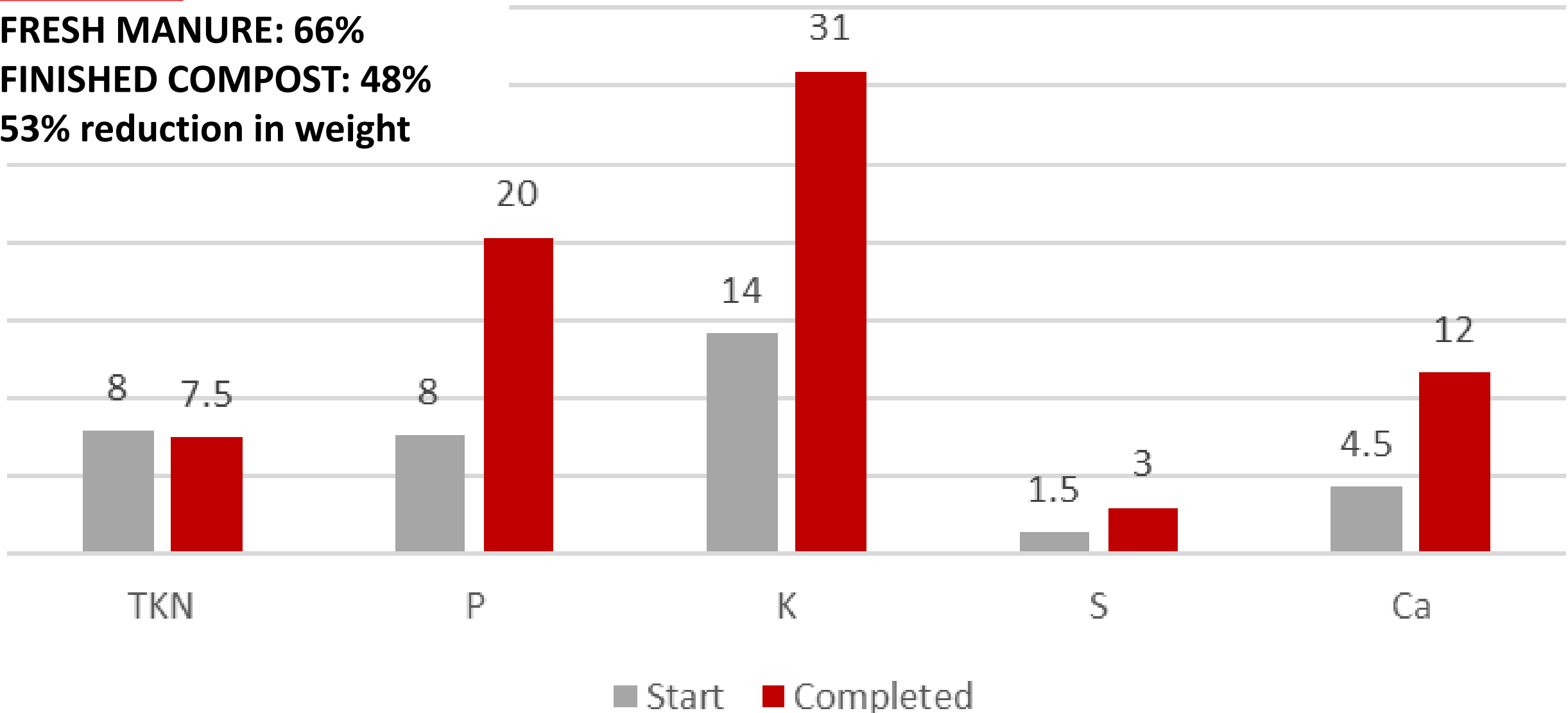
# Change in Nutrient Concentration

## MOISTURE

**FRESH MANURE: 66%**

**FINISHED COMPOST: 48%**

**53% reduction in weight**





# Agronomic Field Trials

- Alternate strips of fresh manure & compost
- 2021-22 eFields Report





# Meeting 2-year Tri-State Fertility Recommendations with Manure, Compost or Fertilizer

Compost  
5 ton

Manure  
10 ton/ac

Fertilizer  
2 yr-Tri-State



# RESULTS 2021 CORN GRAIN TRIAL – Tri-State Trial #4

Treatments	Avg. Emergence (plants/ac)	Moisture (%)	Yield (bu/ac)
200 lbs Potash, 100 lbs MAP, 50 lbs AMS applied/acre Tri-State Fertilizer	26,600	17.6	190 b
10 tons/acre Manure	26,700	17.7	213 a
5 tons/acre Compost	27,400	17.5	202 ab
Treatment Means with the same letter are not significantly different according to Fisher's Protected Least Significant Differences (LSD) test at alpha = 0.1.			LSD: 14.9 CV: 4.3%

Note: Field with no manure history



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CFAES



# What about soybeans the subsequent year?



**CFAES**



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# 2022 Soybean GRAIN TRIAL – Tri-State Trial #4

Treatment	Stand	Moisture	Yield
Tri-State Fertilizer	163,600	11.6	47.0 b
Manure	155,300	11.6	55.5 a
Compost	140,000	11.7	53.9 a

LSD: 3.75, CV: 4.73



**CFAES**

# **Thank You!**

## **Courtney Krieger**

Water Quality Extension Associate

Fulton, Lucas, Williams Counties

[Krieger.117@osu.edu](mailto:Krieger.117@osu.edu)

Work: 419-337-9210

[Waterqualityextension.osu.edu](http://Waterqualityextension.osu.edu)