

NORTHEAST OHIO AGRI-CULTURE NEWSLETTER

Your Weekly Agriculture Update for
Ashtabula and Trumbull Counties

Sept 19, 2023



Hello from Farm Science Review!

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Hello Northeast Ohio Counties!

Farm Science Review is here! You can find a full schedule of events and exhibitors at fsr.osu.edu. A lot of the equipment has returned for 2023 as supply chains seem to have been corrected.

There are some great field demonstrations of new equipment and technology, not to mention great educational opportunities.

We hope to see you here!

Lee Beers
Trumbull County
Extension Educator

Andrew Holden
Ashtabula County
Extension Educator

Latest innovations to be shared at Farm Science Review

By Sherrie R. Whaley

SOURCE: <https://cfaes.osu.edu/news/articles/latest-innovations-be-shared-farm-science-review>

Farmers gather each year to see the latest in agricultural innovations at The Ohio State University's Farm Science Review (FSR). The annual show, sponsored by Ohio State's College of Food, Agricultural, and Environmental Sciences (CFAES), will be held Tuesday through Thursday, Sept. 19-21, at the Molly Caren Agricultural Center in London, Ohio.

Demonstrations, beginning at 12:30 daily, will showcase ag technology innovations including an autonomous tractor, drone spraying, high-clearance robotic irrigation system capable of applying animal nutrient sources to row crops, and wireless communications options for connecting these devices.



"We are beginning to see autonomy product offerings that solve challenging problems for farmers who want to stay ahead of the competition by increasing yields, better utilizing production inputs, and resolving skilled labor shortages during peak times for field operations which ultimately leads to increased profits," said Scott Shearer, professor and chair of the CFAES Department of Food, Agricultural and Biological Engineering (FABE).

The self-driving autonomous farm tractor is one example and performs its duties without an operator in the cab. "They are internet connected to share computational loads with a web-based interface for mission planning, provide in-field high accuracy position information, track progress, and enable remote monitoring of machine performance. Increasingly, artificial intelligence is being utilized to avoid collisions by detecting obstacles including humans, animals, other vehicles, and other obstacles, said John Fulton, professor and Extension specialist in FABE.

"Tractors without drivers are being deployed with varying levels of autonomy ranging from remote monitoring via tractor-mounted cameras to on-board artificial intelligence to carry out routine, repetitive, and labor-intensive procedures."

Because they can record information automatically and store it in the cloud for easy access, automated tractors can also make it easier to create, keep, and transfer records of agricultural procedures. Self-driving and self-steering tractors can also significantly improve the accuracy of seeding, weeding, harvesting, and other procedures which can mean reduced use of seeds, pesticides, and other chemicals.

“There is no doubt that automation has already provided benefits to agriculture,” said Fulton, who specializes in developing technology and automated components related to application equipment to more accurately place and meet site-specific crop and soil needs. His research program also focuses on translational data analytics, developing telemetry solutions, and digital tools to improve the farm business and in-season decisions.

Shearer and Fulton have also conducted research on using drones in agriculture. The machines were initially used for non-spraying applications, such as scouting fields and collecting data on crop and field conditions. When humans scout a field, the professors explained, they typically only go to four or five locations within a field, but a drone can visit as many as 30 locations that are uniformly distributed over a field in less time.

Drones can capture important data such as soil characteristics, location of drainage tiles, crop nutrient stress level, crop emergence or stand counts, weed species and distribution levels across fields, and detection of insects and diseases.

But the most recent advancement related to drones and farming is using drones for spraying and applying to cover crops. Although spraying with a drone is still in its infancy in the United States, interest in the technology is high. “A rapid increase of easy-to-operate drones for spraying pesticides is underway. They are lightweight, but powerful enough to lift a 8–18-gallon tank,” said Fulton. A variety of drones will be on-site at FSR to illustrate how the technology works. Regulatory requirements of drone application in agriculture, as well as current challenges of the technology will also be discussed.

With drones becoming increasingly available to farmers and with the advances in analytical tools, weed detection and eradication can be accomplished with greater speed and accuracy. Research at Ohio State is being conducted to determine spray deposition, swath control, and coverage and drift from drone sprayers in comparison to other methods used for pesticide application.

Participants at FSR will also be able to see a robotic high-clearance irrigation system that can apply liquid animal nutrient sources at the base of actively growing corn plants. The uniqueness of this system is its ability to follow planter passes

regardless of the shape and size of the field. The irrigator follows and applies whatever the crop needs right at the base of the plant throughout the growing season.

“A major benefit of robotic irrigation is the ability to apply both water and nutrients when the crop is most in need of these inputs,” said Andrew Klopfenstein, a senior research engineer in FABE. “Rather than overapplying at less optimal times, nutrients can be applied more frequently in smaller amounts and when crops can readily utilize nutrients, thus reducing nutrient loss and improving nutrient use efficiency.”

Manure application through robotic irrigation systems presents several advantages over traditional land application methods—namely reduced compaction, the ability to apply to growing crops, better application control, and lower costs. Additional advantages may include increased asset utilization through extended application periods, elimination of plugging concerns, reduced odor levels, and reduced surface water contamination.

Automating routine field activities in agriculture results in better input utilization, higher yields, and farming precision, which leads to greater yields and financial returns. One of the most significant impacts seen is gains in efficiency and accuracy. Additional benefits include more timely nutrient application and better distribution, decreased fuel use, and lower labor and production costs. Visit FSR where you can see the machines in action and talk with the Ohio State specialists who are researching the best ways to use them.

Career Opportunity with OSU Extension in Portage County – Agriculture & Natural Resources

Source: <http://go.osu.edu/portagejob>

The Ohio State University Extension (OSUE) seeks a dynamic, fun, inspiring, and motivated educator to work collaboratively with county, area, and state teams of OSUE professionals and with local agency leaders and volunteers. The Extension Educator, Agriculture and Natural Resources (ANR) in Portage County will be responsible for a broad range of basic to complex duties that could include but are not limited to: providing guidance and/or leadership to developing and conducting a proactive applied research and education program in agriculture and natural resources to meet current and future needs in farm management, livestock and crop production, consumer horticulture, commercial horticulture, farmland use issues, food security, innovative agricultural business opportunities, environmental quality and sustainability, renewable energy, and bio-based products.

The position lead volunteer management and program development for the Master Gardener Volunteer (MGV) program and provide training for both MGV and the Ohio Certified Volunteer Naturalist Certificate Program.

WHAT IS EXTENSION? We connect with people in all stages of life, from young children to older adults. We work with families and children, farmers and businessowners, community leaders and elected officials to build better lives, better businesses, and better communities to make Ohio great. Watch a video about us at: <http://go.osu.edu/weareextension>

WE ARE COMMITTED...to an inclusive community in OSU Extension and beyond: <http://go.osu.edu/cfaesdiversity>

HOW TO APPLY? Deadline for applications is Friday, September 22. To apply, go to: <http://go.osu.edu/portagejob>

Avoiding soil compaction during fall harvest

By Lee Beers

Source: <https://www.farmanddairy.com/columns/avoiding-soil-compaction-during-fall-harvest/791328.html>

It's been a tale of two summers this year — one very dry and the other incredibly wet. Drought conditions early in the summer provided great forage harvest conditions but limited yields. Rain in mid-July helped with the second and third cuttings, but the harvest windows have been very short.

Most locations throughout northeast Ohio have received 5 to 8 inches of rain since Aug. 1 with some areas receiving over 10 inches. Shorter days and cooler temperatures have increased the length of time for soil to dry after rainfall.

Taken all together, producers are frustrated as they try to get forages harvested without causing damage to the crops or fields. With corn silage harvest upon us, let's revisit soil compaction and, more importantly, how to avoid it.

What is compaction?

Soil typically consists of 50% solid material (inorganic and organic material) and 50% pore space (air and water). Compaction occurs when the soil is



compressed, reducing the pore space and making the soil denser. Dense soils have less water-holding capacity and limit air movement.

When adequate pore space is available, roots will grow deep and move easily through the soil profile. In compacted soils, roots are often stunted and will grow horizontally along the furrow. Reduction in the size of the root zone limits nutrient uptake and overall crop development. Studies from Minnesota have shown corn can be up to 11% shorter in compacted areas.

There are many ways soil can be compacted, but the primary culprits in forages are axle load, ground pressure, soil moisture and the number of trips across the field. Axle load is how much weight is being carried on each axle, and the higher the axle load, the deeper the compaction. Axle loads up to five tons can cause surface compaction but are not likely to cause compaction to subsoil. Heavier loads of 10 tons or more can compact the soil 20 inches deep.

Reducing compaction

Adding duals or flotation tires to harvest equipment can help with compaction. Research from Europe showed that using flotation tires did reduce topsoil compaction and deformation, but there was no difference in subsoil compaction compared to the use of standard tires. So, while decreasing ground pressure with duals or flotation tires is a good approach to prevent ruts and minimize topsoil compaction, decreasing axle loads is still the best option.

Another way to decrease ground pressure is to use newer increased flexion, very high flexion or radial tires. These tire designs can carry heavier loads at lower pressure than the old bias-ply tires, but they are more expensive. However, on any tire, operating at the correct tire pressure will increase traction, reduce ground pressure and prevent topsoil compaction.

Compaction risk is highest in wet or damp soils. Back in June, our dry soils could support high axle loads, but that is not the case in the current conditions. Mud can cause rutting, slipping and generally miserable harvest conditions.

While this mostly impacts topsoil, wet soil under tires is like a hydraulic press, causing that weight to be distributed down into the subsoil. This is why subsoil compaction is such an issue with wet soils. The best approach is to wait for the soils to dry out, but that is not always practical or possible.

Identification

Soil compaction is usually compounded by repeated traffic over several harvests. Grain carts, silage wagons and harvest equipment generally follow a similar path each year.

You may even notice poor crop stands in your high-traffic areas. Other times compaction is not as easy to locate.

To help identify problematic areas, use a penetrometer to measure the pressure required to press the metal probe into the soil. Taking measurements randomly across a field will help identify compacted areas. Although there is no accepted standard for soil compaction because of different soil types, values above 300 psi are generally considered compacted. A penetrometer will also identify how deep the compaction goes.

Shallow compaction can be fixed with tillage, but tillage can also be a double-edged sword. While a chisel plow can break up topsoil compaction, if not done correctly, it can increase subsoil compaction, decrease soil health and increase erosion.

Deep rippers are becoming a popular option but require care. This type of tillage can create a deeper plow pan that will, in turn, require a deeper ripper to fix, setting you off into a bad cycle.

Wheat Planting Management Considerations for Fall 2023

By Laura Lindsey, Prabath Senanayaka Mudiyansele, Pierce Paul, Ed Lentz, CCA

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2023-32/wheat-planting-management-considerations-fall-2023>

This year, wheat yields were extremely high across Ohio. In the Ohio Wheat Performance Test (<https://ohiocroptest.cfaes.osu.edu/wheattrials/default.asp?year=2023>), grain yield averaged between 86 and 126 bu/acre across five Ohio counties. Cool temperatures and adequate subsoil moisture led to a long grain fill period. The long grain fill period coupled with low disease resulted in high-yielding conditions. Mother nature certainly helped us out in 2023; however, fall wheat management is important to set your crop up for success.

4. Planting depth is critical for tiller development and winter survival. Plant seed 1.5 inches deep and make sure planting depth is uniform across the field. No-till wheat seeded into soybean stubble is ideal, but make sure the soybean residue is uniformly spread over the surface of the ground. Shallow planting is the main cause of low tiller numbers and poor winter survival due to heaving and freezing injuries. Remember, you cannot compensate for a poor planting job by planting more seeds; it just costs more money.
5. Follow the Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa(https://agcrops.osu.edu/FertilityResources/tri-state_info).
6. Apply 20 to 30 lb of actual nitrogen per acre at planting to promote fall tiller development. A soil test should be completed to determine phosphorus and potassium needs. Wheat requires more phosphorus than corn or soybean, and soil test levels should be maintained between 30-50 ppm (Mehlich-3 P) for optimum production (Table 1). Do not add phosphorus if soil test levels exceed 50 ppm.

Table 1. Wheat phosphorus recommendations from the Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa.

	Wheat Yield Potential (bu/acre)			
	60	90	120	150
Mehlich-3 P (ppm)	-----lb P ₂ O ₅ /acre-----			
10	130	145	160	175
20	80	95	110	125
30-50	30	45	60	75
>50	0	0	0	0

Table 1. Wheat phosphorus recommendations from the Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa.

Soil potassium should be maintained at levels of 100-130 and 120-170 ppm (Mehlich-3 K) on sandy soils (CEC < 5 meq/100 g) and loam/clay soils (CEC > 6 meq/100 g), respectively. If potassium levels are low, apply K₂O fertilizer at planting, depending on soil CEC and yield potential (Table 2).

Table 2. Wheat potassium recommendations from the Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa.

		Wheat Yield Potential (bu/acre)			
Soil CEC	Mehlich-3 K (ppm)	60	90	120	150
		lb K ₂ O/acre			
Sands	50	100	105	115	120
(<5 meq/100 g)	75	65	75	80	90
	100-130	35	45	50	60
	>130	0	0	0	0
Loams and Clays	50	160	165	175	180
(>6 meq/100 g)	75	115	120	130	135
	100	70	80	85	95
	120-170	35	45	50	60
	>170	0	0	0	0

Table 2. Wheat potassium recommendations from the Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa.

Soil pH should be between 6.3 and 7.0. In Ohio, limed soils usually have adequate calcium and magnesium.

Fastballs, Curveballs and Lessons Learned

By Stan Smith, OSU Extension PA, Fairfield County

Source: <https://u.osu.edu/beef/2023/09/13/fastballs-curveballs-and-lessons-learned/>

Corn residue interseeded with a cereal grain can provide lots of feed for dry cows. Having grown up in the 50's and 60's, the social distancing and self-quarantine we experienced in recent years weren't really too much of a struggle for me. Afterall, if you grew up on a farm in rural Ohio in those days, the only time you saw anyone but your closest neighbor was at the feed mill, church, or baseball practice. Speaking of baseball, another lesson from those days that's served me well is when in a close game, you don't want to be sitting on a fastball if the pitcher you're facing can consistently throw a curve for a strike. Suffice to say, Mother Nature continues to prove she can throw any pitch she wants, at any time, and throw it for a strike.



Northeast Ohio Agriculture

OHIO STATE UNIVERSITY EXTENSION
Ashtabula, Portage and Trumbull Counties

Considering the extremes in weather we've experienced in recent years, to suggest we need to remain flexible with our forage and feed management plans would be an understatement. However, as we consider past experience when setting course for the future, let's reflect on our recent past and a few of those lessons learned.

Too wet, and then too dry, and too wet again does not average out to just right

After experiencing several Ohio winter and early springs of near record precipitation, followed by dry summers, this year most of us enjoyed a dry – perhaps too dry – late spring and early summer. Regardless, for many it allowed us to make some of the best quality first cutting hay we've seen in years. While quality might have been good, for some, yield was lacking.

Is it time to assemble a feed management plan that buffers the cow herd against stresses resulting from weather extremes many anticipate will continue in the coming years? Feeding pads, managed grazing of forages or crop residues, and stockpiled forage all go a long way towards keeping cows out of the mud while meeting their nutritional needs. While managed grazing requires less investment, a feeding pad allows forages to be processed and bunk fed for more efficiency, and when needed, blended with additional protein or energy from by-product feed sources.

We can't starve a profit into a cow, and feed quality, feed waste, and cow condition must be monitored utilizing a variety of tactics to keep them properly fed.

Cover crops aren't just cover crops

The value of utilizing cover crops for feed or bedding is well documented in Ohio. Cover crops fed to beef cattle in both early spring and/or early winter remain an asset particularly in times when quality forages may be limited.

Crop Residue

With 3.5 million acres of Ohio corn to harvest this fall, for a spring calving cow herd the opportunity is great for extending the grazing season well into fall and perhaps winter with corn crop residue. While corn residues offer a considerable amount of digestible energy and fiber, it's always good to review the palatability and practicality of utilizing residues resulting from corn or perhaps even soybean harvest as a significant feed source. This is especially true as one considers economics of baling and hauling the residues to the cows. Grazing is always the most economical option.

Fall Weed Control

Weather extremes in recent years and the necessity to graze or harvest fields in less than optimum soil conditions allowed many weeds to gain a foothold in places we've not always seen them in the past. Poison hemlock, cressleaf groundsel, and in some cases Canada thistle are the first ones that come to mind first.

The ability to effectively use 2,4-D or similar products to kill broadleaf plants in the fall eliminates the possibility of killing desirable grasses such as when a glyphosate based product is used, thus maintaining desirable competition and helping to prevent future broadleaf weed invasions. Another advantage of controlling perennial and biennial broadleaves in the fall is with few gardens or annual flower beds still intact, it provides an opportunity to utilize chemical broadleaf killers that have been known to volatilize or drift when used in the spring, killing or severely damaging sensitive garden, fruit and landscape plants.

That being said, if you identified locations this past spring where poison hemlock or cressleaf groundsel was growing, it's likely new plants will be emerging there soon if not already. Scout those locations from now until freezing temperatures shut the plants down for the winter and treat them with herbicides such as 2,4-D, dicamba or Crossbow.

Fall Fertilization of Forages

Again, we can't starve profit into a cow, or a hay field! If it's not been done for a few years now's a perfect time to pull soil samples. If you don't soil test this year, at least replace the P and K you removed during forage harvest. Each ton of forage removed from a field – regardless the quality – takes with it 12 pounds of P₂O₅ and 50 pounds of K₂O.

Forage Quality Analysis

You can't manage what you don't measure and even though we're guessing our hay quality is better this year, do we know how much better? By knowing we can strategically utilize the varying quality of forages we harvest throughout the year at the most opportune times. Poorer quality goes to the bred, dry, mid gestation cows and the best feed goes to them as they near calving and into lactation.

Adapt and change

Considering two years are seldom the same, not too long-ago colleague Dr. Les Anderson, University of Kentucky Extension Beef Specialist, said it best in his monthly newsletter . . . *"Adapt and change. It's the story of life and it's how we evolve."*

To do that we must value experience, stay flexible, and be prepared for the next curve Mother Nature throws!

CFAES

Wednesday
October
25

6:00 PM – 7:30 PM
Bloomfield Livestock
Auction
North Bloomfield, OH

BEEF QUALITY ASSURANCE (BQA)

This program offer the opportunity to earn your certification or renew you expiring one. The certification cycle is 3 years.

Andrew Holden and Noelle Barnes will cover a multitude of topics, including carcass quality, injection protocol, and animal handling, that will provide your BQA certification and ultimately impact your success at marketing.



THE OHIO STATE UNIVERSITY
EXTENSION

Call 440-576-9008 to RSVP

**Please arrive at least 10 minutes
prior to 6:00 PM**

College of Food, Agricultural, and Environmental Sciences

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OHIO STATE UNIVERSITY EXTENSION PRESENTS

Ag Lender Seminars

Professional Development for Professional Lenders. Seminars are designed to share current information with lenders and enhance the working relationship between OSU Extension and Ag Lenders.

2023 Featured Speaker at all locations...

Farm Bill 2023 Update: Direct from Washington D.C.

by: John Newton, Ph.D., Chief Economist to Senator John Boozman, Ranking Member of the U.S. Senate Committee on Agriculture, Nutrition & Forestry. Newton: Ohio State University Graduate: Ph.D 2013, M.S. 2012, B.S. 2010.

Additional speaker and topics by location



Ag Lender
Seminar Info



Ag Lender
Seminar
Registration



THE OHIO STATE UNIVERSITY
EXTENSION

CFAES

Ottawa, Ohio

October 17, 2023

Putnam County

Educational Service Center

124 Putnam Parkway

Ottawa, Ohio 45875

Wooster, Ohio

October 18, 2023

Buckeye Agricultural Museum

877 West Old Lincoln Way

Wooster, Ohio 44691

Urbana, Ohio

October 19, 2023

Campaign Co. Community Ctr

1512 S. US Hwy 68

Urbana, Ohio 43078

Washington Court House, Ohio

October 19, 2023

Fayette Co Agricultural Ctr

1415 US Hwy. 22 SW

Washington CH, Ohio 43160

More Information:

Ag Lender Seminars at The Ohio
State University

u.osu.edu/aglenderseminars/

Farm Office at The Ohio State
University

[Farmoffice.osu.edu](https://farmoffice.osu.edu)

Wm. Bruce Clevenger
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419-770-6137

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Statewide Sheep Production Tour



September 30 - October 1, 2023

Sponsored by: Ohio Sheep Improvement Association and OSU Extension

Michigan Lamb Marketing and Dry Lot/ Confinement Sheep Operations



Saturday September 30, 2023

- **Ronnie Berry Halal Meats (11:00 am)** – Dearborn, MI – Ronnie Berry's Meats, has served the Dearborn, MI community for over 60 years. They stock a wide variety of fresh meat weekly including lamb, veal, chicken, and beef. They also smoke their own jerky, beef pepperoni, and lunch meats.
- **Eastern Market of Detroit (12:30 pm)** – Detroit, MI – Attending the Saturday Market is an experience that is undeniably Detroit. Over 225 market vendors share their produce and stories with up to 40,000 visitors in one day during their busy season. The tradition of this market has been a cornerstone of the city for 125 years and is crucial to their mission of nourishing a healthier, wealthier, and happier city.
- **Wheaton Hampshires (3:30 pm)** – Charlotte, MI – Intensive club lamb operation primarily marketing to 4-H and FFA members as well as marketing genetics to other club lamb producers across the country. Primary facilities are confinement/dry lot type buildings due to extensive AI, ET and Ram Semen Collection programs, although some pasture is utilized during different times of the year. The most unique part of the buildings is a climate-controlled ram barn so that ram semen collections can be done throughout the year.

Scheduled overnight stay in the East Lansing, MI area (at own expense).
Must Register for hotel room on ONLINE REGISTRATION FORM for hotel availability

Sunday October 1, 2023

- **Michigan State University Sheep Teaching and Research Center (9:30 am)**– Lansing, MI – MSU sheep farm has an accelerated lambing program and modern lambing barn and feeding system running 300 ewes. They utilize a total mixed ration feeding program to provide a quality and low-cost diet. The farm uses natural methods to achieve a high rate of reproductive success with lambing periods every 4 months. The farm's facilities allow it support applied research projects and the education of both students (undergraduate and veterinary) and producers on modern sheep production practices.
- **Dr. Richard Earhardt Family Sheep Farm (1:30 pm)** – Eaton Rapids, MI – The Earhardt Farm has an accelerated lambing program with 200 ewes and practices Management intensive Grazing (MiG) on 25 acres. The focus on forage quality and strategic feeding to create the level of reproductive efficiency needed to produce a consistent set of lambs year around. Dr. Richard Earhardt is the Michigan State University Small Ruminant Specialist and has been a speaker at the Buckeye Shepherd's Symposium on multiple occasions.

Meals and Hotel at your own expense - Van costs split with those who ride in van

Van transportation will be provided for up to 12 people – first come-first served

Tour reservations due: Monday September 18, 2023 – need registered for van and hotel reservations

Contact: Mark Badertscher, OSU Agriculture and Natural Resources Extension Educator, Hardin County,
(419) 767-6037, badertscher.4@osu.edu for tour details.



Scan for Registration