Hello Northeast Ohio Counties!

Spring weather is in the forecast this week with highs in the 60s.

If the warm weather is making you think of planting season, check out the first article on what you can be doing now to make sure you are prepared to plant this spring.

If you know of any Ashtabula County students will be going or currently attending college that are involved in agriculture, have them check out the multiple Ashtabula County Scholarships shared in this newsletter!

Stay safe and healthy!
GEARING UP FOR SPRING
By: Mark Sulc, Jason Hartschuh, CCA
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2021-05/gearing-spring

The current weather outlook for early spring planting season is starting to sound like a broken record of the last few years – a wetter pattern than normal for Ohio and the Great Lakes region. Along with a warmer than average pattern. So, it is more important than ever to be ready to take full advantage of any short windows of opportunity we will get to be in the fields this spring. This is particularly important because most forages should be planted earlier rather than later, the exception being the warm-season grasses like sorghum-sudangrass.

Start preparing by imagining your first day of planting forages. What will you do the day you plant? It might even help jog your thoughts to physically “walk through” those activities. List every single activity needed to get the whole job done.

Then ask the question, “What can I do NOW that will make that first planting day go smoothly?”

Below are some examples of preparations to do now:

1. Make sure your fuel supply is full and fill the tanks of all tractors that will be used. Service all tractors.
2. Get any needed fertilizer on hand or order it to be spread as soon as the field is fit (hopefully you pulled a soil sample last fall, and if not, do it ASAP and send to the lab).
3. Calibrate the fertilizer spreader.
4. Buy the seed (including any companion crops you will use) and have it on the farm, if not done already.
5. Buy inoculant if seed is not pre-inoculated.
6. Service all tillage equipment that will be used and have it ready to go, including hooking it to the tractor if possible.
7. Get the drill/planter out, service it, and set the planting depth so it is ready to go. Arrange for equipment you will rent or borrow. Consider contingency plans for your borrowed equipment if used to plant forages on other farms each spring also.
8. Calibrate the drill to the desired seeding rate using the seed that will be planted and then don’t touch the drill settings. Watch this video about calibrating drills:
9. If contracting planting, get agreements and expectations in place now.

10. Finally list the field work tasks that you will need to do when the weather and soils are fit, then prioritize them. Think through the tough choices you might have to make between competing activities. Think through contingency plans if each specific activity cannot be completed in a timely manner, or if it can’t get done at all this spring because of wet weather.

This last #10 item is the hardest. When the windows of opportunity are shorter than the list of work that can be accomplished, then tough choices are necessary. For example, how do you prioritize planting forages versus manure spreading in the spring? It will likely depend on the specific situation. If the manure is stored in a lagoon, then when the lagoon is full, the manure must be pumped out and spread on the field rather than planting forages, so the forage planting might have to wait. But planting forages too late in the spring brings a lot of risk to stand establishment and low yields (maybe only one cutting). If forage planting will be delayed past May 10, it might be better to plant a summer annual for a couple cuttings, then kill it and plant the perennial forages in August. But if the manure is dry pack, perhaps it is better to take those first days of field work to plant the perennial forage and spread the manure later on other fields. Thinking through these choices and establishing a game plan will help you be more efficient and not waste time in indecision or making a less than optimal choice for the situation.

We surely all hope for good opportunities for planting this spring, but climatologists are forecasting another possibly challenging planting season. Do what is in your control now to prepare as much as possible for when planting time comes. You do not want to waste hours of potential field planting doing stuff you can do today. Try to be completely ready, as if you will be planting tomorrow morning…which we hope will be true one day very soon!
Projected Returns for 2021 - Increasing Fertilizer Prices May Force Tough Decisions

By: Barry Ward, John Barker
Source: [https://agcrops.osu.edu/newsletter/corn-newsletter/2021-05/projected-returns-2021-increasing-fertilizer-prices-may-force](https://agcrops.osu.edu/newsletter/corn-newsletter/2021-05/projected-returns-2021-increasing-fertilizer-prices-may-force)

The profit margin outlook for corn, soybeans and wheat is relatively positive as planting season approaches. Prices of all three of our main commodity crops have moved higher since last summer and forward prices for this fall are currently at levels high enough to project positive returns for 2021 crop production. Recent increases in fertilizer prices have negatively affected projected returns. Higher crop insurance costs as well as moderately higher energy costs relative to last year will also add to overall costs for 2021.

Production costs for Ohio field crops are forecast to be modestly higher compared to last year with higher fertilizer, fuel and crop insurance expenses. Variable costs for corn in Ohio for 2021 are projected to range from $386 to $470 per acre depending on land productivity. Variable costs for 2021 Ohio soybeans are projected to range from $216 to $242 per acre. Wheat variable expenses for 2021 are projected to range from $166 to $198 per acre.

Returns (excluding government payments) will likely be higher for many producers depending on price movement throughout the rest of the growing year. Grain prices currently used as assumptions in the 2021 crop enterprise budgets are $4.30/bushel for corn, $11.55/bushel for soybeans and $6.25/bushel for wheat. Projected returns above variable costs (contribution margin) range from $216 to $434 per acre for corn and $284 to $509 per acre for soybeans. Projected returns above variable costs for wheat range from $193 to $342 per acre. As a reminder, fixed costs (overhead) must be paid from these returns above variable costs. Fixed costs include machinery ownership costs, land costs including rent and payment for owner operator labor and management including other unpaid family labor.

Fertilizer prices continue to increase. If you have not checked fertilizer prices lately, be prepared for some sticker shock. Producers with some fertilizer purchased and stored or pre-priced prior to recent price increases will likely see a healthier bottom line this upcoming crop year.
Those with little or no fertilizer pre-purchased and stored or pre-priced may want to consider using P and K buildup to furnish crop needs this year in anticipation of possibly lower prices in the future. Now may be a good time review your fertilizer plans as you are considering how to best utilize your financial resources in 2021.

Use realistic yield goals. Yield goals vary by field. Each field has unique characteristics that can impact yield.

Utilize crop removal rates to determine crop nutrient needs. Crop removal rates can be found in the new Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa (Tables 15 and 16), available at your local Extension Office.

Start with a recent soil test. If your soil test levels are in the maintenance range or higher, 2021 may be a good year to “borrow” from your soil nutrient bank. As an example, a 150-bushel corn crop will remove about 55 pounds of P2O5 per acre in the harvested grain. This would result in a reduction in the soil test level of approximately 3 ppm.

Current budget analyses indicates favorable returns for soybeans compared to corn but crop price change and harvest yields may change this outcome. These projections are based on OSU Extension Ohio Crop Enterprise Budgets. Newly updated Enterprise Budgets for 2021 have been completed and posted to the Farm Office website: https://farmoffice.osu.edu/farm-mgt-tools/farm-budgets

**Release of nutrients from lake-bottom sediments worsens Lake Erie's annual 'dead zone'**

By: Materials provided by University of Michigan.

Source: [https://www.sciencedaily.com/releases/2021/02/210219091843.htm](https://www.sciencedaily.com/releases/2021/02/210219091843.htm)

Robotic laboratories on the bottom of Lake Erie have revealed that the muddy sediments there release nearly as much of the nutrient phosphorus into the surrounding waters as enters the lake's central basin each year from rivers and their tributaries. Excessive phosphorus, largely from agricultural sources, contributes to the annual summer cyanobacteria bloom that plagues Lake Erie’s western basin and the central basin’s annual “dead zone,” an oxygen-starved region that blankets several thousand square miles of lake bottom and that reduces habitat for fish and other organisms.

The release of phosphorus from Lake Erie sediments during periods of low oxygen -- a phenomenon known as self-fertilization or internal loading -- has been acknowledged since the 1970s. But the new University of Michigan-led study marks the first time the process has been monitored step by step for an entire season using lake-bottom sensors.

Northeast Ohio Agriculture

OHIO STATE UNIVERSITY EXTENSION
Ashtabula, Portage and Trumbull Counties
The authors of the new study, published online Feb. 18 in the journal *Environmental Science & Technology Water*, say self-fertilization is likely increasing the severity of Lake Erie's central-basin dead zone and could make it harder to control in the future, as the climate continues to warm.

"Until now, we lacked evidence to pinpoint when and where this phenomenon occurs in Lake Erie and how much it contributes to nutrients in the lake," said study lead author Hanna Anderson, a research technician at U-M's Cooperative Institute for Great Lakes Research who did the work for a master's thesis at the School for Environment and Sustainability.

"These new measurements have allowed us to estimate that this self-fertilization process contributes up to 11,000 metric tons of phosphorus to the lake water each summer, an amount that is close to the total annual runoff of phosphorus from rivers and tributaries into the central part of the lake," said Casey Godwin, an assistant research scientist at the institute and a co-author of the paper.

Efforts to control Lake Erie nutrient pollution, or eutrophication, have focused on reducing the amount of phosphorus-rich runoff from farms and other sources that flows into the lake from rivers and their tributaries. In 2016, the U.S. and Canadian governments adopted a phosphorus-reduction target of 40%.

The authors of the new *Environmental Science & Technology Water* study say self-fertilization by phosphorus (P) released from lake-bottom sediments also needs to be considered.

"Environmental managers tasked with tributary load reduction must take internal loading estimates into account when determining how to balance the total P load," they wrote. "Historical and persistent sediment P loading represents a delayed lake response to eutrophication and prevents the successful management of a system when only external P loading is considered."

In addition to several U-M scientists, authors of the paper include researchers from the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Laboratory. U-M scientists and staff at CIGLR collaborate with NOAA GLERL on a number of projects such as this.

The researchers deployed two small autonomous laboratories at lake-bottom sites in Lake Erie's central basin -- one at a depth of 67 feet and the other at a depth of 79 feet - in late July 2019 and left them there for more than two months.

The self-contained chemistry labs, manufactured by SeaBird Scientific and owned by the team's NOAA collaborators, are cylinders 22 inches long and 7 inches wide. The
labs and their batteries were placed inside a protective steel framework that was lowered from the stern of a ship. The metal cage was attached to a 150-pound weight and two white floats that kept it off the bottom.

The autonomous analyzers were programmed to measure phosphorus concentrations in the water every six hours. They also monitored water temperature and dissolved-oxygen levels. More than 300 phosphorus measurements were made at each site before the devices were retrieved in early October.

This previously unobtainable dataset yielded some surprising findings. For example, earlier studies had suggested that nutrients begin to flow out of lake-bottom sediments when dissolved-oxygen concentrations in the surrounding waters drop to very low levels, a condition called hypoxia. But the chemistry robots showed that the flow of phosphorus did not begin during hypoxia -- even when oxygen levels dropped below the point where fish can survive. Instead, the "positive P flux" from the sediments began 12 to 24 hours after dissolved oxygen levels in the lake-bottom water dropped to zero, a condition called anoxia. At the two central-basin sites in Lake Erie, that period began in late summer and continued into early October.

"Within 24 hours of when the oxygen went away completely, we recorded a rapid increase of phosphorus in the water, and this continued until the concentration at the bottom of the lake was more than a hundred times higher than at the surface," said study senior author Thomas Johengen, director of U-M's Cooperative Institute for Great Lakes Research. "Our findings about the timing of phosphorus release relative to oxygen levels in the water are the first of their kind for the Great Lakes and represent a novel application of this technology," Johengen said.

Knowing when the phosphorus release began, the rate of flow from the sediments, and the duration of the anoxic period enabled the researchers to estimate the total amount of phosphorus added to Lake Erie's central basin each year due to internal loading. The researchers estimated that Erie's lake-bottom sediments annually release between 2,000 and 11,500 metric tons of phosphorus. The high end of this range equals the approximate annual inflow of phosphorus to Lake Erie's central basin from rivers and tributaries: 10,000 to 11,000 metric tons.

The released phosphorus is in a readily available form called soluble reactive phosphorus, or SRP, that likely fuels central-basin algal growth. When those algae die and sink, bacteria decompose the organic matter and consume oxygen in the process. The result: an oxygen-starved region in bottom and near-bottom waters of the central basin known as the dead zone.

"Internal loading of phosphorus from lake-bottom sediments can become a positive feedback loop: Hypoxia leads to the release of P from the sediments, which causes
more algae growth, and the dead and dying algae consume the oxygen in the water and contribute to hypoxia the following summer," Godwin said.

"This type of feedback has been seen in lakes worldwide, and it interacts with ongoing efforts to reduce phosphorus loads from Lake Erie's tributaries," he said. As the Great Lakes continue to warm in the years ahead due to human-caused climate change, Lake Erie's central-basin dead zone is expected to form earlier and last longer each year, resulting in a greater supply of phosphorus released from the sediments, according to the study authors.

The current study demonstrates the potential for using robotic laboratories to monitor those changes, as well as any changes that may occur due to the decreased flow of nutrients into Lake Erie from rivers and tributaries, according to the authors. Internal loading from central-basin sediments likely does not impact the severity of Lake Erie's western-basin algal blooms, according to the researchers.

"NOAA's mission in the Great Lakes includes observing, understanding and forecasting significant events such as internal loading. Very often, the development and application of advanced technology such as this can confirm a hypothesis or provide novel insight that was previously impossible," said study co-author Steve Ruberg, senior scientist at NOAA's Great Lakes Environmental Research Laboratory.

"This important observational result will contribute to NOAA's collaboration with the EPA's Great Lakes National Program Office under the Great Lakes Water Quality Agreement, significantly improving our understanding of hypoxic zone phosphorus loading and the subsequent impact on the Lake Erie ecosystem," Ruberg said.

In addition to Anderson, Godwin, Johengen and Ruberg, the authors of the Environmental Science & Technology Water paper are Heidi Purcell and Peter Alsip of U-M's Cooperative Institute for Great Lakes Research and Lacey Mason of NOAA's Great Lakes Environmental Research Laboratory. The work was supported by NOAA's National Centers for Coastal Ocean Science Competitive Research Program and through the NOAA Cooperative Agreement with the Cooperative Institute for Great Lakes Research at the University of Michigan.

Journal Reference:
1. Hanna S. Anderson, Thomas H. Johengen, Casey M. Godwin, Heidi Purcell, Peter J. Alsip, Steve A. Ruberg, Lacey A. Mason. Continuous In Situ Nutrient Analyzers Pinpoint the Onset and Rate of Internal P Loading under Anoxia in Lake Erie's Central Basin. ACS ES&T Water, 2021; DOI: 10.1021/acsestwater.0c00138
**Pesticide and Fertilizer Recertification Update**

Happy New Year! I’m sure some of you have received your private pesticide license renewal from the ODA, and are wondering how to get recertified. Admittedly, we are behind this year as we try to navigate changing guidelines from the state, county, and OSU on holding meetings. Hitting a moving target is a little challenging! We will make sure that everyone will get recertified one way or another.

While we prefer in-person programs, that is not possible in the near future. We have been granted permission by the ODA to hold virtual live meetings for pesticide recertification, and we have four sessions scheduled for the upcoming months. You can find those dates below, and registration links as well. These are live events and not recorded. We realize that not everyone has a computer, or reliable internet so we are working on some in-person events later this spring. We will provide updates on those in-person events when those are available.

Thankfully, the deadline for applicators with an expiration in 2020 and 2021 has been extended to July 1, 2021. We hope with the option of having recertification in warmer weather, we can move outside and get together in person. If you have any questions please give us a call and we will answer any questions you have.

- Normal/Agronomy
  - Date: April 7, 2021, Time: Daytime 10AM – 2PM
  - All categories, CORE and Fertilizer

You can register now at [https://go.osu.edu/NEOPAT21](https://go.osu.edu/NEOPAT21)

**Ashtabula Co. 2021 Ag Scholarships Announced**

By: Andrew Holden

Today I want to share with you some of our great agricultural scholarships that are available for Ashtabula County students planning on, or currently attending, college. Last year thousands of dollars were awarded to local students to assist them in pursuing a college degree. If you or someone you know has an agriculture/4-H background or is planning on or currently pursuing an agricultural degree, I encourage you to check out the great opportunities below. All of these scholarships can be found on our website, [www.Ashtabula.osu.edu](http://www.Ashtabula.osu.edu), or by contacting your school’s guidance counselor. If you have any questions about the scholarships you can also call me at the Ashtabula Extension Office at 440-576-9008.

**Ashtabula County OSU Extension and the Ashtabula County Agricultural Scholarship Committee** are pleased to announce that applications are now being accepted.
accepted for a minimum of thirteen scholarships for the 2021-2022 school year to Ashtabula County students enrolled in either an accredited full four year college or an accredited two year technical institute. The Ashtabula County Agricultural Scholarship Fund was founded on April 29, 1952 to promote interest in the study of agriculture, family and consumer science, environmental sciences or natural resources in an accredited full four-year college or an accredited two-year technical institute. This fund awards scholarships to students attending an accredited four-year college or two year technical school. Each year the general scholarship fund awards at least two $1,000 scholarships. The committee also works with local organizations and farm families to offer additional scholarships. Both graduate and undergraduate students are encouraged to apply for the scholarships which they meet the eligibility requirements. The scholarships are for a one year period. A student may apply and be awarded a scholarship in three years from the scholarship fund. Application forms with complete instructions for applying are now available and can be received by stopping in at the Ashtabula County Extension Office or by calling 440-576-9008. Applications can also be accessed at: http://go.osu.edu/agscholarship. The application deadline is May 1st and no late applications will be considered. More information can also be obtained by emailing Holden.155@osu.edu

Ashtabula County OSU Extension and the Ashtabula County Cattlemen’s Association are pleased to announce they will be awarding two youth beef scholarships for the 2021-2022 school year. One $1,000 scholarship will be awarded to a deserving 2021 High School Senior who will be attending an accredited full four year college or an accredited two year technical institute in 2021-2022. In addition, one $500 scholarship will be awarded to a current College Student who is currently attending an accredited full four year college or an accredited two year technical institute. Applicants must be resident of Ashtabula County. The first preference by the Ashtabula County Cattlemen’s Association is the scholarships be awarded to deserving students who have been involved in the beef industry as a youth. Applications must be received by the Ashtabula County Cattlemen’s Association by April 30th, 2021 by 4:30 p.m. for consideration for the scholarship. No late applications will be considered. The application can be obtained at: Ashtabula.osu.edu. Additional information can be obtained by calling the Ashtabula County Extension office at 440-576-9008.

The Bloom Family 4-H Scholarship was established to honor the memory of George (Wally)& Ina Bloom and Jim & Nancy Bloom who collectively provided leadership to Ashtabula County 4-H for more than 80 years. A single $1000.00 scholarship may be awarded to an incoming freshman residing in Ashtabula County with a 4-H background planning to attend The Ohio State University - Main Campus, Marion, Newark or ATI. The scholarship will be awarded to the recipient based on the applicant’s character, financial need, general ability, service to the community and participation in 4-H activities and programs. The scholarship be paid to the recipient after successfully completing the first semester or quarter. If the recipient no longer
plans to attend The Ohio State University, the student who was the second choice will be awarded the scholarship. Visit [www.ashtabula.osu.edu](http://www.ashtabula.osu.edu) to download the application or call the OSU Extension office at 440-576-9008. The completed application (supplied by the Ashtabula County Extension Office and Ashtabula County high school guidance offices) may be submitted to the Ashtabula County Extension Office, 39 Wall St., Jefferson, OH 44047, by **April 1**.

**Sponsors for 2021 AG Day Sought**

Every spring around 1,000 first graders from all Ashtabula County Schools descend on the Ashtabula County Fairgrounds to participate in Ashtabula County’s “Ag Day.” Coordinated by OSU Extension and the Ashtabula County Farm Bureau, the primary goal of Ag Day is to educate first graders on where their food comes from and to showcase the different types of agricultural commodities which are being produced in Ashtabula County. Due to the pandemic, last year’s Ag Day was postponed, with the plan of offering this year’s Ag Day to two classes. As the pandemic continues into 2021 there are still decisions that will be made to ensure both safety and great agricultural education is provided.

What will Ag Day 2021 look like? Currently there are some unknowns, but we are excited to be serving both Ashtabula County’s first and second graders. Due to the unknowns when it comes to in-person gatherings, we are working hard to be prepared for any situation. Our first choice would be to have all schools attend the event in person at the fairgrounds. This would be accomplished over two days (May 13 & 14, 2021). While we are preparing for in-person, we know that for many reasons this may not be possible. That is why we are creating an Ag Day-classroom edition that can be done in classrooms or virtually online. This will include videos we are making from stations we would normally have and supplies that will be sent to the schools to provide the hands-on activities. Regardless of if we hold Ag Day online or in person, the online content and activities will enhance the Ag Day experience for years to come and offer the ability to educate students about agriculture beyond our one-day event. We plan on making a final decision in March and will continue to prepare for any situation.

Ashtabula County’s Ag Day program has become a community supported effort as over 300 volunteers and donors help to make this day a reality for the students. The cost of hosting this event is nearly $22,000 (both monetary and in-kind) and without the support of many this program would not be possible.

We are asking you to consider becoming a donor for the 2020 Ag Day and are offering 5 levels of sponsorship:

- **Platinum Sponsorship** - $1,000 and over
- **Gold Sponsorship** - $500 to $999
- **Silver Sponsorship** - $250 to $499

---

**Northeast Ohio Agriculture**

**Ohio State University Extension**

Ashtabula, Portage and Trumbull Counties
Bronze Sponsorship - $100 to $249

Friends of Ag Day - $1 to $99

For 2020, we are asking all Ashtabula County farms, agribusinesses, and supporters of Ashtabula County Agriculture to consider donating to help us educate our youth about agriculture. Your gift to this program is 100% tax deductible. Donors are recognized in a variety of manners.

A sponsorship letter can be obtained by calling the Ashtabula office at 440-576-9008 or emailing Andrew Holden at Holde.155@osu.edu. If you are interested in volunteering at this year’s program or would like to be a sponsor, please contact Abbey Averill at 440-576-9008.

If you have never experienced Ag Day, please check out this short video from Ag Day 2019: https://youtu.be/3Aw_P2-fi8k
GROWING PRACTICES FOR SMALL SCALE FRUIT AND VEGETABLE FARMS

Workshops To Take Place on zoom

Tuesdays | March 9th to April 20th
6:30 PM - 8:30 PM

The Ohio State University
College of Food, Agricultural, and Environmental Sciences

Trumbull Neighborhood Partnership
The Ashtabula County Master Gardeners Present

The Beginning Gardener Series

TUESDAYS, MARCH 16TH - APRIL 13TH, 7:00 P.M.

Learn vegetable and flower gardening basics from the Ashtabula County Master Gardeners! Join us for this 5-part webinar series every Tuesday at 7:00 PM starting March 16th. Each program will be about 30 minutes long, with time to ask questions at the end. If you are wanting to plant a garden for the first time, or looking to improve your basic gardening skills, this series is for you! From types of garden, to plant care, to pest management, you'll have the knowledge to help you grow fresh produce and flowers in no time!

Tuesday, March 16th  – Types of Gardens and Site Selection
Tuesday, March 23rd  – Soil Preparation and Testing
Tuesday, March 30th  – Plant and Seed Selection
Tuesday, April 6th    – Plant Care Through the Season
Tuesday, April 13th  – Garden Pest Management

Location: Online via zoom  
Cost: Free

Details: Sign up today at: https://go.osu.edu/bgs21

Contact information: For any questions or assistance signing up, please contact Andrew Holden at Holden.155@osu or call 440-576-9008

Ashtabula.osu.edu