

# Conservation Quarterly

## Changes to nitrogen rate recommendations could affect your farm efficiency

– Justin White, District Technician

Determining accurate nitrogen application rates for corn production has always been a difficult task. Formerly with the guidance of the “Tri-State Fertilizer Recommendations,” nitrogen application rates were based on crop yield goals. However, it has been found that this method would often over or under supply nitrogen.

In 2015, the Tri-State recommendations for nitrogen rates were updated to be based on the economic value of corn. By using economic models, it is now possible to achieve a more profitable application rate using the current market value of corn. The tool developed to help farmers more accurately apply nitrogen is Corn Nitrogen Rate Calculator (CNRC) website: <http://cnrc.agron.iastate.edu>. This site allows farmers to find the greatest return on nitrogen by inputting prices of nitrogen and corn, giving a more detailed view of how the nitrogen application will impact crop yields. This tool and others like it will continue to be developed as more data is collected in order to give the best recommendations for corn nitrogen application.

### Why is this important?

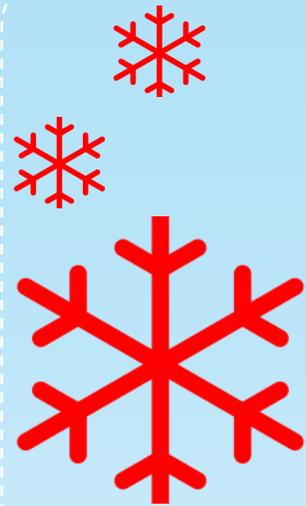
Fertilizer cost and efficiency are large factors in the desire to more accurately apply nutrients to meet crop needs. Over or under applying nitrogen has an economic impact on the profitability and efficiency of farming operations.

The overuse of nitrogen is a contributor to excess nutrients in waterways, which is linked to multiple environmental and health issues due to water quality. Examples of issues caused by excess nutrients include harmful algal blooms, such as in Lake Erie and Grand Lake St. Marys, low oxygen levels in water bodies, and high nitrate levels leading to health issues in infants.

### What else can be done?

As outlined in the “Tri-State Fertilizer Recommendations”, there are several best management practices that can help to increase the efficiency of nitrogen application.

See **WHAT ELSE CAN BE DONE** Page 7

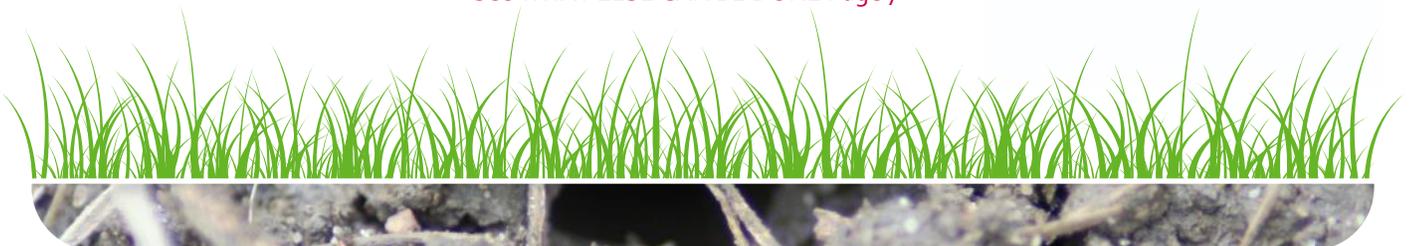


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### Important Dates

- 2/20 Presidents’ Day (closed)
- 2/27-2/28 OFSWCD Annual Partnership Mtg., Columbus
- 3/14 SWCD Board Meeting
- 3/17 Upper Paint Creek EQIP Deadline



## Considerations for planning a windbreak include:

### Purpose and goal

#### Suitable vegetation

- Use native plants whenever possible as these species are adapted to our soil and are more likely to succeed.
- Plant multiple species of trees and shrubs, both deciduous and coniferous, so that if one species should have a problem, the windbreak will continue to serve its purpose.

#### Plant density

#### Orientation, height and length

#### Pest and disease control

- Missing trees, which create gaps, can concentrate the force of the wind and thus cause more problems than in unprotected areas.

#### Want to learn more?

See USDA National Agroforestry Center  
[www.unl.edu/nac/windbreaks.htm](http://www.unl.edu/nac/windbreaks.htm)

## Windbreak basics

- Harriet Dana, Madison County Master Gardener

**What is a windbreak?** According to the USDA National Agroforestry Center, "windbreaks are plantings of single or multiple rows of trees, shrubs or grass that protect crops, livestock, wildlife or people from wind's harmful consequences." Collins English Dictionary defines a windbreak as "a fence, line of trees, etc. serving as a protection from the wind by breaking its force."

**How do windbreaks work?** A windbreak is a semisolid barrier to the wind. When the wind hits the windbreak, air pressure builds up. The air flows up and over and around the barrier, thus reducing the wind velocity. The denser, higher and wider the windbreak, the greater is the reduction of wind flow. The area downwind from the windbreak is protected. Thus, windbreaks create micro climates.

**Why plant a windbreak?** Throughout history, windbreaks were created to protect homes from cold winds or to prevent soil erosion caused by winds. Today, we are aware that there are additional benefits. The USDA states there are economic benefits directly associated with windbreaks. Net yields for crops increase 10% to 20% with properly placed windbreaks and livestock show improved weight gains. By providing a more comfortable environment, windbreaks reduce energy consumption. Less wind in the winter lowers heating bills; shade in the summer lowers cooling bills. Windbreaks, known as "living snow fences", reduce the effect of drifting snow. Windbreaks can screen us from undesirable views and can help buffer excessive noise such as high speed traffic, particularly when combined with a solid structure. Windbreaks provide shelter for feathered and furry creatures as well as beneficial insects, such as honeybees. Additionally, there's no denying that windbreaks are aesthetically pleasing.

**Does a windbreak affect climate change?** Trees trap greenhouse gases, mostly carbon dioxide, store organic matter and release oxygen through a process called photosynthesis. Thus, windbreaks aid in fighting climate change. Windbreaks also help reduce some of the risks due to climate change that we all face no matter where we live. We have seen evidence of more frequent and intense droughts. Since windbreaks reduce wind speed, they reduce evapotranspiration. We have seen evidence of increased wind and precipitation intensity. Again, windbreaks help reduce the intensity of the wind and rain and thus decrease damage to vegetation and buildings. We have seen evidence of changes in the growing season due to changes in temperature and precipitation. Windbreaks create micro climates which aid in controlling the growing season. Soil protected by windbreaks tends to be warmer, thus increasing the growing season. Windbreaks reduce the stress caused by winter storms and temperature extremes. Finally, windbreaks provide habitat for beneficial animals, birds and insects.



## OSU Extension Winter Programs

**Feb 24: Farmers' Breakfast:** Enlist/Extend Soybean Technology Update (Mark Loux), 8:00-9:30a, Red Brick Tavern (1700 Cumberland St, London). Cost: FREE, includes hot breakfast. Pre-registration required.

**Feb 28: Precision Planter University,** 8:00a-4:40p. Beck's Hybrids, London. Registration available after Jan 1.

**Mar 7: Fertilizer Applicator Certification Training,** 6-9p, Ronetti's Pizza (23 Main St, London). Cost: FREE, includes pizza. Registration required.

**Mar 9: Pesticide Applicator Recertification Training,** 9a-12p, Red Brick Tavern (1700 Cumberland St, London). Categories 1, 2 and 6 covered. Cost: \$30 includes hot breakfast. Registration required.

**Mar 17: Farmers' Breakfast:** What's New in Precision Ag? (John Fulton), 8:00-9:30a, Red Brick Tavern (1700 Cumberland St, London). Cost: FREE, includes hot breakfast. Pre-registration required.

**Mar 23: Study Session and Exam for New Pesticide Applicators** 11a-4p, Range Township Hall, Midway. Training and testing for pesticide applicators to get licensed. Training is free and includes lunch. Prior to training, pick up study guides at your county office. You must pre-register for both the test and the training. Register for the test with ODA online at: <http://www.agri.ohio.gov/apps/odaprs/pestfert-PRS-index.aspx>, or by phone at (614) 728-6394. To reserve a lunch and a spot at the training, contact Mary Griffith at 740-852-0975 or [griffith.483@osu.edu](mailto:griffith.483@osu.edu).

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*OSU Extension Madison County is offering a number of programs related to agriculture and natural resources. For more information, please visit Extension's website at [madison.osu.edu](http://madison.osu.edu), or contact Mary Griffith at 740-852-0975 or [griffith.483@osu.edu](mailto:griffith.483@osu.edu).*

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## Pesticide and Fertilizer Applicator Licensing

- Mary Griffith, OSU Extension Educator

In Ohio, pesticide applicators are required to have a license to apply restricted use pesticides. In 2014, Ohio passed a new law requiring fertilizer applicators to obtain a separate license to apply any type of commercial fertilizer. With the new fertilizer license requirement, and many farmers considering transferring pesticide licensing responsibilities to their children, many have questions about each licensing process.

To obtain a pesticide license, applicators must pass an exam. The Ohio Department of Agriculture administers exams throughout the entire year at many locations across the state. There will be an exam in Madison County on March 23rd at the Range Township Hall in Sedalia. The exam begins at 1:00. Prior to the exam, the Extension office will host a study session at 11:00, with lunch included. Study materials are also available at the Extension office. Applicators can search and register for exams through the ODA at this website: <http://www.agri.ohio.gov/apps/odaprs/pestfert-prs-index.aspx>.

The process for obtaining a fertilizer license is a little different. At this time, there is no exam. Applicators are simply required to attend a three hour training class. The law requires anyone who applies fertilizer to over 50 acres of cropland to get this certification by September 2017. After September 2017, the process for obtaining a license may change, and it is possible that an exam will be part of the process in the future. The Extension office is offering a fertilizer certification training on March 7th at 6:00pm at Ronetti's Pizza in London.



## Big or small—give Caleb a call



When landowners of Madison County want advice on wildlife habitat who can they call? A great place to start is their Private Lands Biologist with ODNR Division of Wildlife. That person would be me, Caleb Shields, the new Private Lands Biologist for Madison County.

I'm happy to be covering Madison County. Having lived in Mt. Sterling for the past five years, it feels like home. Two of my big passions, hunting and fishing, are what guided me into a natural resources career. I attended Hocking College for an Associate's Degree in wildlife, then the University of Rio Grande for a Bachelor's Degree in Fish and Wildlife Management and Conservation.

I work out of the Division of Wildlife District Five office in Xenia, Ohio. My job duties include consulting with landowners about wildlife habitat improvements. I often help landowners understand some of the Farm Bill Programs such as CRP or ACEP and help them establish eligibility. I enjoy helping landowners understand the importance of

habitat diversity on the landscape. The more diverse we make our properties, the more beneficial it is for wildlife.

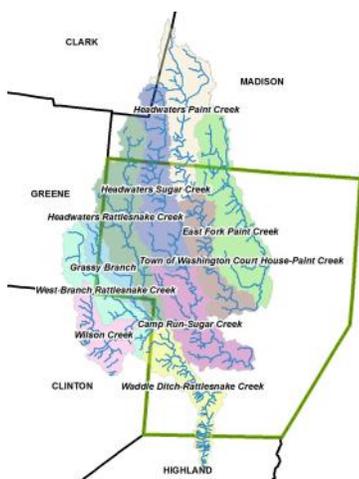
One big thing across the state is the Ohio Pollinator Habitat Initiative. Some pollinators, such as bees and butterflies, are in trouble due to loss of habitat. Pollinators rely on flowering plants as food and as host plants. Pollinators are needed for nearly 1/3 of the world's food production, including fruits and vegetables. If you are interested in improving pollinator habitat on a large or small scale, give me call.

Some people know what they want out of their property prior to contacting the DOW and others don't, and that's fine. I am here to help educate and walk landowners through the processes of becoming a more active land manager. Whether the landowner wants to see more deer and turkey on their property, or is interested in improving bobwhite quail habitat, building a wetland, or establishing pollinator habitat, I would be glad to help.



Contact:  
Caleb Shields,  
Private Lands Biologist  
ODNR, Division of Wildlife  
District Five Headquarters  
1076 Old Springfield Pike  
Xenia, Ohio 45385  
(937) 347-0926 (office)  
caleb.shields@dnr.state.oh.us

*Conservation is a state of harmony between men and land ~Aldo Leopold*



## Upper Paint Creek Mississippi River Basin Initiative

The Upper Paint Creek Mississippi River Basin Initiative provides funds for producers in the focus area (shown left) to complete conservation practices that improve overall soil health, reduce erosion and curb nutrient leaching. Interested producers may submit applications for EQIP at any time. To be considered for funding this year, submit an application by March 17, 2017. Applications received by this date will be ranked according to their overall environmental benefit. Those providing the highest environmental benefit will be selected for funding. Visit the Madison SWCD/NRCS office located at 831 U.S. HWY 42 NE, London or call (740) 852-4003 for more information.



## Save the Monarch and control pigweed

- Julia Cumming, Program Administrator

The fact is the North American monarch butterflies are in trouble. Their population has greatly declined and could disappear within our lifetime. Scientists estimate that monarchs need a million and a half acres of additional habitat each year to grow the eastern population to 300 million butterflies by 2024. The Ohio Pollinator Habitat Initiative is a collaborative effort between public and private partners to create pollinator habitat across Ohio and improve pollinator conservation for the benefit of all Ohioans.

Monarchs are in the process of being considered for protection under the Endangered Species Act. We do not want to see this listed - not only from an environmental point of view, but from a business point of view. If this species is listed, it would be illegal to alter their habitat without first getting a permit, which will cost money, time and labor. The USDA offers a variety of conservation programs to help landowners implement the necessary conservation measures to help the butterfly. If we don't have to list it, everybody wins!

However, it is important to realize that in modern society, it is sometimes more convenient and cheaper to purchase equipment, feed and seed from thousands of miles away, which can bring with it invasive species.

In Ohio, Palmer amaranth appears to have been introduced in 3 ways:

1. Presence of Palmer seed in the cotton-based feeds that are brought here from the south;
2. Movement of contaminated combines from Palmer-infested areas of the south to Ohio; and
3. Presence of Palmer seed in seed for conservation plantings (cover crop/CRP/wildlife/pollinator), which comes from states farther west such as Texas and Kansas.

It is easy to underestimate how aggressive this weed can be. The problem is that Palmer amaranth is a glyphosate-resistant weed, which has caused entire cotton and soybean fields to be mowed down. When it is young, it can be hard to distinguish from other treatable weeds. Become educated about identifying this weed at <https://u.osu.edu/osuweeds/>.

Strategies for controlling Palmer amaranth from Purdue Extension Weed Science include:

1. Rotate crops and herbicides – rotation helps slow further resistance issues and preserves current herbicide tools.
2. Deep tillage to bury seeds of Palmer amaranth.
3. Use crimped cereal rye grass as cover crop, in combination with deep tillage, as a weed suppression technique.
4. Keep drainage ditches and field borders clean of Palmer amaranth to reduce the spread of the population through pollen and seed.
5. Farm equipment, specifically combines, will spread Palmer amaranth seed. Clean the combine as best as possible to assure seed will not be spread. Be meticulous.

Creating pollinator habitat is crucial for the survival of the Monarch butterfly. ODA will test for the presence of palmer amaranth seed at no charge if the seed is intended for conservation plantings. Contact David Simmons at ODA at 614-728-6410 or [simmons@agri.ohio.gov](mailto:simmons@agri.ohio.gov) for more information.

When a species becomes endangered, it is an indication that something is not healthy on the American landscape. Americans have gotten together before in a concerted effort to help the bald eagle, the peregrine falcon, the American bison and the sage grouse, to name a few. People are coming together to make a difference for the Monarch butterfly – and we at the Madison SWCD and NRCS are here to help you in the effort, too.



*Last October, milkweed seed pods were collected in a state-wide initiative to establish new plantings and create additional habitat for the monarch butterfly throughout Ohio.*



## Farmland preservation program

The Madison County Commissioners were allocated \$515,363 from the Ohio Department of Agriculture Clean Ohio Local Agricultural Easement Purchase Program to purchase agricultural easements from willing landowners who wish to preserve his or her farm in perpetuity. An agricultural easement is a voluntary, permanent, legally binding restriction placed on a farm that limits the use of the land to predominantly agricultural activity. The application period began on January 15 and closes on March 31.

Farms with the highest scores are offered a price for their easement based on the score, not to exceed \$2,000/acre and \$500,000 total. The Madison County Commissioners would co-hold the easement with Ohio Department of Agriculture (ODA) and/or the Natural Resources Conservation Service. Farms will be monitored once per year to ensure compliance.

The benefit of an agricultural easement is that the landowner owns the land and may sell, gift or otherwise convey it to others. In addition, the farm will remain in one piece because the landowner and future generations will not be able to subdivide the farm into smaller farms or houses once the agricultural easement is placed on it.

The program is highly competitive and funding is not guaranteed. To apply, contact the Madison Soil and Water Conservation District .



## Boots on the ground

One of the functions of a Soil and Water Conservation District (SWCD) is to provide technical support to landowners as they become better stewards of their natural resources. With financial support from the Madison County Commissioners and Ohio Department of Agriculture, the Madison SWCD has received a grant from the National Fish and Wildlife Foundation to fund a technical person that could work with private landowners and operators to adopt voluntary best management practices that will reduce sediment and nutrient loading and benefit the aquatic species in Upper Paint Creek and the Mississippi River Basin.

As a result of the grant, the Madison SWCD hired Justin White, former intern, as the new District Technician specializing in nutrient and sediment reduction. Some of the activities he was involved with during his internship was the Soil Museum at the Madison County Fair, technical development classes, and various natural resource consultations. He graduated from The Ohio State University with a degree in Food, Agricultural, and Biological Engineering with a focus on ecological engineering. He is eager to learn new skills and apply his knowledge while aiding in conservation efforts. Please call our office for information on our technical assistance.



*Justin White, District Technician*

## To apply

The farm must be:

- At least 40 acres in size (or 10 – 39 acres if contiguous to existing protected land);
- Enrolled in the Current Agricultural Use Valuation (CAUV) program; and
- Enrolled in an Agricultural District.



## Meet Mike Rakes, NRCS Soil Conservation Technician



Madison SWCD welcomes USDA-NRCS staff member, Mike Rakes, to our conservation partnership. Mike is the new Soil Conservation Technician for Clark and Madison Counties. Mike hails from Lincoln County, West Virginia, where he has lived most of his life. He earned his degree in Natural Resource and Recreational Management from Marshall University. Although he is a big video game player, he likes to take time out to hike in the hills. He has a loving wife, along with two small dogs and a cat. He is glad to share his culture and experience other cultures, too. He looks forward to beginning his new career and providing assistance to the people of Clark and Madison Counties.

## What else can be done? from page 1

Knowing the soil is the first step in applying accurate amounts of nutrients. Soil samples should be taken every three to four years to ensure optimum levels of nutrients for crop production. While soil tests do not generally test for nitrogen, knowing the soil characteristics of the field can help to have a higher efficiency in nitrogen application. Soil test providers should be asked if their fertilizer recommendations can follow the Tri-State Fertilizer guidelines.

The timing of nitrogen application and how the nutrient is incorporated have a large impact on the efficiency of the application. Applying close to the period of rapid crop growth allows for more of the nutrient to be used by the plant and not escape from the field, as the plant is actively taking and using the nutrient. Incorporation of nitrogen and other nutrients into the soil can aide in reducing the risk of the nutrient runoff. Certain nutrient sources have a higher chance of being removed from the field, so it is important to know the best practice for the type of fertilizer being used.

By following the Tri-State Guideline and using tools such as the Corn Nitrogen Rate Calculator, farmers can increase the economic efficiency of their farming operation as well as reduce the impact of runoff nutrients to the environment.

Madison Soil and Water  
Conservation District  
831 US HWY 42 NE  
London, Ohio 43140

Office Hours: 7:30 a.m.-400 p.m.  
Mondays through Fridays  
Phone: 740-852-4003 opt. 3

<http://co.madison.oh.us/swcd/>  
<https://www.facebook.com/madisonswcdohio>

## Conservation Partnership

We would like to thank our Madison County Commissioners, the Ohio Department of Agriculture and the United State Department of Agriculture for being our partners to help landowners and concerned citizens in our county protect our natural resources for generations to come.

## Contact Us

Please contact Gail Wilson at [gail.wilson@oh.nacdnet.net](mailto:gail.wilson@oh.nacdnet.net) if you wish to be put on or removed from our email list. Your board members are Howard Yoder, Chairman; David Junk, Vice Chairman; Bob Hunter, Treasurer; Jonathan Francis and Ramona Porter. Your SWCD staff members are Julia Cumming, Program Administrator; Justin White, District Technician and Gail Wilson, Operations Coordinator. Your NRCS staff members are: Deba Mohler, District Conservationist; Will Cook, Resource Conservationist; Mike Rakes, Soil Conservation Technician; Mike Retterer, Pheasants Forever Farm Bill Biologist; and Jeremiah McDowell, Civil Engineering Technician. All NRCS/MSWCD programs and services are offered on a non-discriminatory basis without regard to race, color, religion, sex, age, marital status, or handicap.

