CFAES

OHIO STATE UNIVERSITY EXTENSION

NORTHEAST OHIO AGRI-CULTURE NEWSLETTER

Your Weekly Agriculture Update for Ashtabula, Portage and Trumbull Counties

November 9, 2021

Ashtabula County Cattleman's Prime Rib Dinner Held Last Saturday

In This Issue:

Hello Northeast Ohio Counties!

Hopefully, everyone was able to take advantage of the break in the weather. We saw many fields being harvested across NE Ohio. Many producers are battling the mud and the grain moisture after a few weeks of less-than-ideal conditions.

Those with BQA Certifications that are expiring, or those wanted to become BQA Certified. There will be a training at the Bloomfield Auction, tomorrow the 10th, Starting at 6PM. Also, check out the flyer for the Portage BQA in December!

Have a great week!

Lee Beers
Trumbull County Extension Educator

Andrew Holden
Ashtabula County Extension Educator

Angie Arnold
Portage County Extension Educator

Weather Update: Seasonal Rollercoaster

By: Aaron Wilson
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2021-38/weather-update-seasonal-rollercoaster

Summary
After the warmest October on record (1895-present), a flurry of frosty of mornings have officially brought the 2021 growing season to a close. Many areas have experienced low temperatures in the low to mid 20s, with the coldest temperature of 19°F occurring near DeGraff in Logan County on November 5. Precipitation has varied widely across the state, with the heaviest occurring across Ottawa County and south-central Ohio (Figure 1). Wet conditions there have continue to hamper harvest and manure activities. Outside of these areas, precipitation has been a bit below average. We have also seen our first reports of snowfall across northeast Ohio. For more climate information, check out the State Climate Office of Ohio

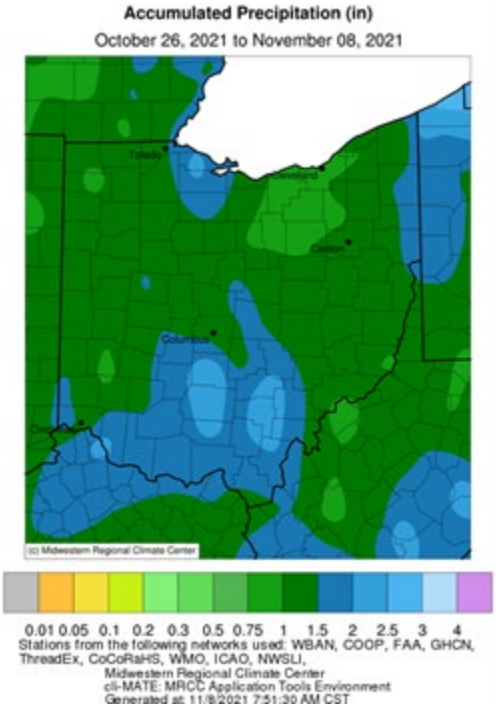


Figure 1). Accumulated precipitation for October 26 – November 8, 2021. Figure courtesy of the Midwestern Regional Climate Center (https://mrcc.purdue.edu/).

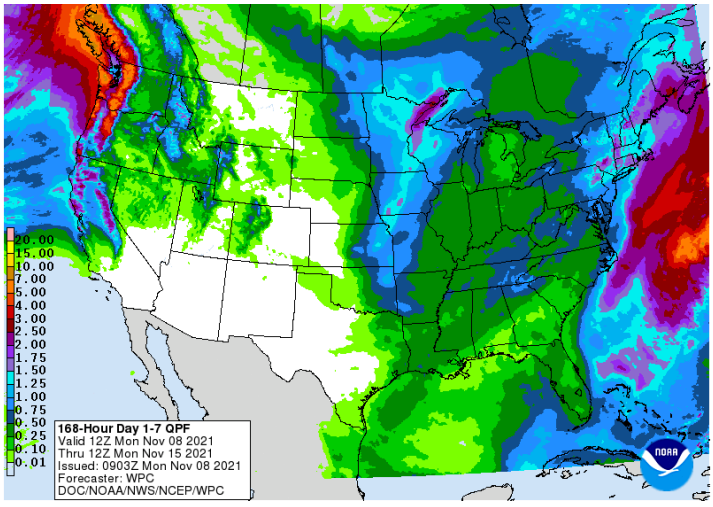


Figure 2). Precipitation forecast from the Weather Prediction Center for 7a Monday Nov 8 – 7a Monday Nov 15.

Forecast
High pressure will remain anchored southeast of the region over the next couple of days. A weak cold front could bring a few widely scattered showers across the northwest counties Tuesday night. After another dry day on Wednesday, a much stronger cold front will approach the region on Thursday, bringing widespread rain showers and gusty winds. High temperatures will reach the 60s across Ohio for Tuesday through Thursday, 50s on Friday, then upper 30s to mid

40s over the upcoming weekend. There could be a few rain and/or snow showers across the north this weekend as well. The Weather Prediction Center is currently predicting 0.25-0.50" of precipitation over the next 7 days, with slightly greater amounts for the far northeast and southeast portions of the state (Figure 2).

The Climate Prediction Center's 6–10-day outlook for the period of November 14-18, 2021 and the 16-Day Rainfall Outlook from NOAA/NWS/Ohio River Forecast Center indicate that temperatures are likely to be below average with near to below average precipitation (Figure 3). Climate averages for this period include a high temperature range of 52-57°F, a low temperature range of 35-38°F, and average rainfall of 0.60-0.80 inches.

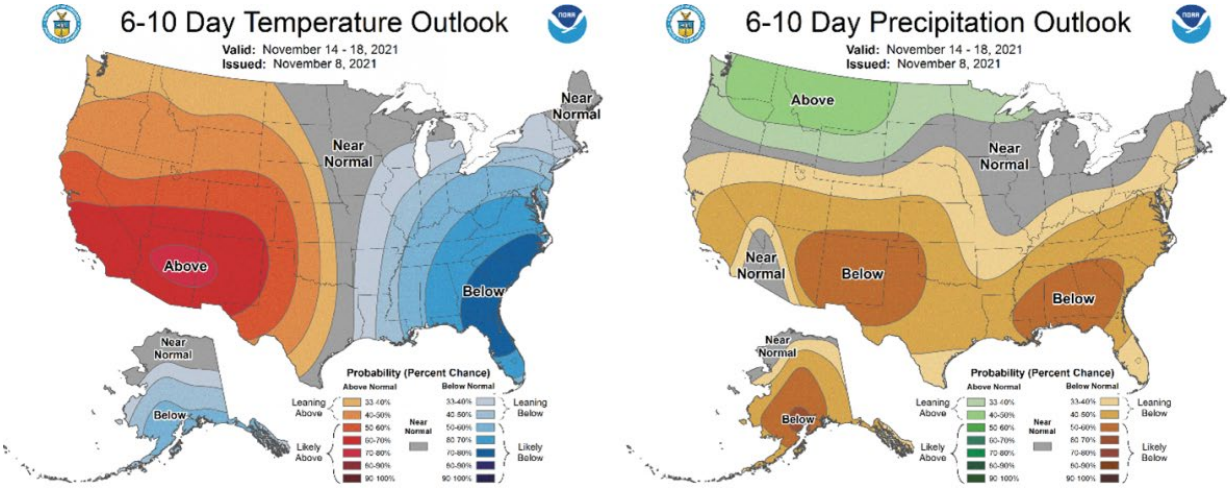


Figure 3) Climate Prediction Center 6-10 Day Outlook valid for November 14-18, 2021, for left) temperatures and right) precipitation. Colors represent the probability of below, normal, or above normal conditions.

Help Wanted: Recruiting During a Labor Shortage

By: Jeffrey K. Lewis, Attorney and Research Specialist, Agricultural & Resource Law
Source: https://farmoffice.osu.edu/blog/thu-11042021-627pm/help-wanted-recruiting-during-labor-shortage

Over the past few months, we have all heard about the labor shortage affecting American employers in various industries all over the country. Now is as difficult a time as ever to find employees. As an agricultural employer, it may be easy to relax some of your established policies and procedures when going through the employee recruitment process, especially while navigating the labor shortage. But, as an employer, you are obligated to comply with state and federal law regardless of the labor climate. Below we review a few important concepts to help refresh employers of their obligations under Ohio and federal law when they engage in the recruitment process.

Walking the fine line of job descriptions. One of the first thing an employer should do when beginning the recruitment process is to define the job qualifications in order to identify the minimum qualifications an employer is willing to accept in a new employee. However, some care should be taken in this step. If an employer has unrealistic expectations, it may make it difficult to fill the position. Then, out of frustration or urgency, an employer will fill the position with someone that does not meet the stated minimum qualifications. This creates a problem if an employer ends up hiring an employee that does not meet the minimum qualifications after previously rejecting other applicants with similar qualifications. Those rejected applicants may have a lawsuit for employment discrimination. On the other hand, if an employer's written expectations are too low, an employer may have a difficult time defending its decision to reject an individual who met the stated minimum qualifications while the employer searched for someone who met what the employer was really looking for. An employer needs to be consistent and stick to its stated qualifications when making employment decisions or risk opening itself up to employment discrimination lawsuits.

Defining the essential functions of the job is essential. Creating a comprehensive and detailed job description and a list of job qualifications helps employers narrow its applicant pool and provides a basis to make certain employment decisions. It also helps employers define the essential functions of a job which helps employers stay compliant with Ohio and federal employment laws. For example, The **American with Disabilities Act** ("ADA") makes it clear that an employer does not need to employ someone who cannot perform the essential functions of the job. This does not mean that every function performed by an employee is "essential." The **Equal Employment Opportunity Commission** ("EEOC") makes it clear that marginal functions of the job are not "essential." Some of the factors that help determine what functions are essential include:

- The employer's judgment as to which functions are essential;
- Written job descriptions prepared before advertising or interviewing applicants;
- The amount of time spent on the job performing the function; and
- The consequences of not requiring the employee to perform the function.

Job Applications. Most employers understand it is unlawful to discriminate against employees or potential employees based on race, religion, sex, national origin, age, or disability. On job applications, however, employers need to be careful when asking what may seem like innocent questions that relate to things like age, religion, national origin, marital status, children, criminal history, U.S. citizenship, medical history, or disability. Asking these types of questions may lead to a finding that an employer engaged in a discriminatory practice. For example, it is permissible to ask if an applicant is legally permitted to work in the United States; it is impermissible to ask where someone was born. It is permissible to ask if someone is able to perform the essential functions of the job; it is impermissible to ask if someone has any health issues that would prevent them from doing the job. These are just a couple examples of

the types of questions an employer is allowed to ask on an application. Employers should consult with an attorney to make sure that all questions on an application are compliant with state and federal standards.

Pre-employment drug and alcohol testing. There are no laws that prohibit employers from testing its employees for drugs and alcohol. However, there are laws that regulate the timing of such tests. To help employers, the ADA separates testing into two categories, “pre-offer” testing and “post-offer” testing. In the pre-offer stage, an employer may test a potential employee for any illegal drug use but cannot test for alcohol. Illegal drug use is not protected under the law. However, employers need to be careful from automatically disregarding all employees that test positive for controlled substances. A person with chronic back pain may have a perfectly legal reason for having certain substances in their system, especially if they are under a strict pain management program. Once an employer learns of an employee’s legal justifications for certain controlled substances, an employer cannot use the information as basis to refuse employment, terminate, or discipline an employee. In the post-offer stage, employers are allowed to test for alcohol. Testing for alcohol is considered a medical examination, and employers are only allowed to subject their employees to medical examinations once an offer of an employment has been given. Regardless of which type of testing an employer seeks to use, employers must be consistent in the way they implement such testing. Testing must be done in a non-discriminatory manner, meaning an employer must make all employees take the same test or forgo any testing at all.

Background Checks. Ohio does not prohibit the use of background or credit checks on potential employees. There are, however, several regulations that relate to employers that use background or credit checks. First, background and credit checks are subject to the federal Fair Credit Reporting Act (“FCRA”) which requires employers to obtain written consent from the applicant, give the applicant notice of the employer’s intention to reject their application based on the results of the background check, and notify the applicant of any final decision to reject the applicant because of the background check. Additionally, employers need to be careful about how they handle prior arrests and convictions. If an employer does decide to reject an application based on any prior arrests or convictions, the employer needs to consider the nature of the job, the nature and severity of the offense, and how much time has passed since the offense. For example, if a farmer is looking to hire a general farm laborer, a conviction for driving under the influence from 10 years ago may not be sufficient grounds to reject an application. Unless the position requires the applicant to drive on a consistent basis, the offense may not really be related to the nature of the job. Furthermore, enough time may have passed that would make it discriminatory to reject an application for this type of offense.

Interviewing. Interviews are ripe for potential discrimination claims because they are less structured than applications and insert the "human element." When conducting an interview, employers should stick to a script. A script will help an employer avoid potential discrimination lawsuits and gives the employer the ability to carefully select its interview questions. When asking questions, an employer is not liable for any information that an applicant willingly provides. For example, if the questions is "tell me about yourself" and an applicant provides information about a medical condition or their family, an employer cannot be found liable for any discriminatory practices. An employer cannot, however, use the information to make any employment decisions. If an applicant is providing too much information, it is best for the employer to quickly move on to the next subject to avoid eliciting any other information that could be used against an employer in a discrimination lawsuit.

Hiring. When deciding to choose one applicant over another, employers need to have a fair and equal system in place. Employers need to be able to point to a specific procedure that demonstrates an employer's nondiscriminatory reason for choosing on applicant over another. For example, if one applicant is more qualified than another for a job, it is easy to prove a nondiscriminatory purpose for hiring the more qualified candidate. If there are two equally qualified candidates, it is even more important to have a nondiscriminatory procedure in place when deciding between the two applicants. For example, an employer could have a policy in place that states if two equally qualified candidates apply for the same position, the candidate that applies first shall be given the job offer.

New hire reporting. All employers are required by the U.S. Customs and Immigration Services to verify the identity and employment eligibility of all employees by filing out **Form I-9**. Ohio employers are also required by the **Ohio Department of Family and Job Services** ("ODFJS") to report the hiring, rehiring, and return to work of paid employees. The new hire report must be completed within 20 days after the employee is hired or returned to work.

Conclusion. In these trying and difficult times, compliance with state and federal regulations may be the last thing on an employer's mind. However, these laws are always in effect, regardless of circumstance. Complying with state and federal laws will only help employers defend any employment decisions and to avoid potential employment discrimination lawsuits.

References and Resources

Ohio Revised Code Chapter 4112 – Civil Rights Commission
Americans with Disability Act, 42 U.S.C. §§ 12101-12117
Title VII of the Civil Rights Act, 42 U.S.C. § 2000e *et seq*.

ODA Issues Quarantine for Spotted Lanternfly

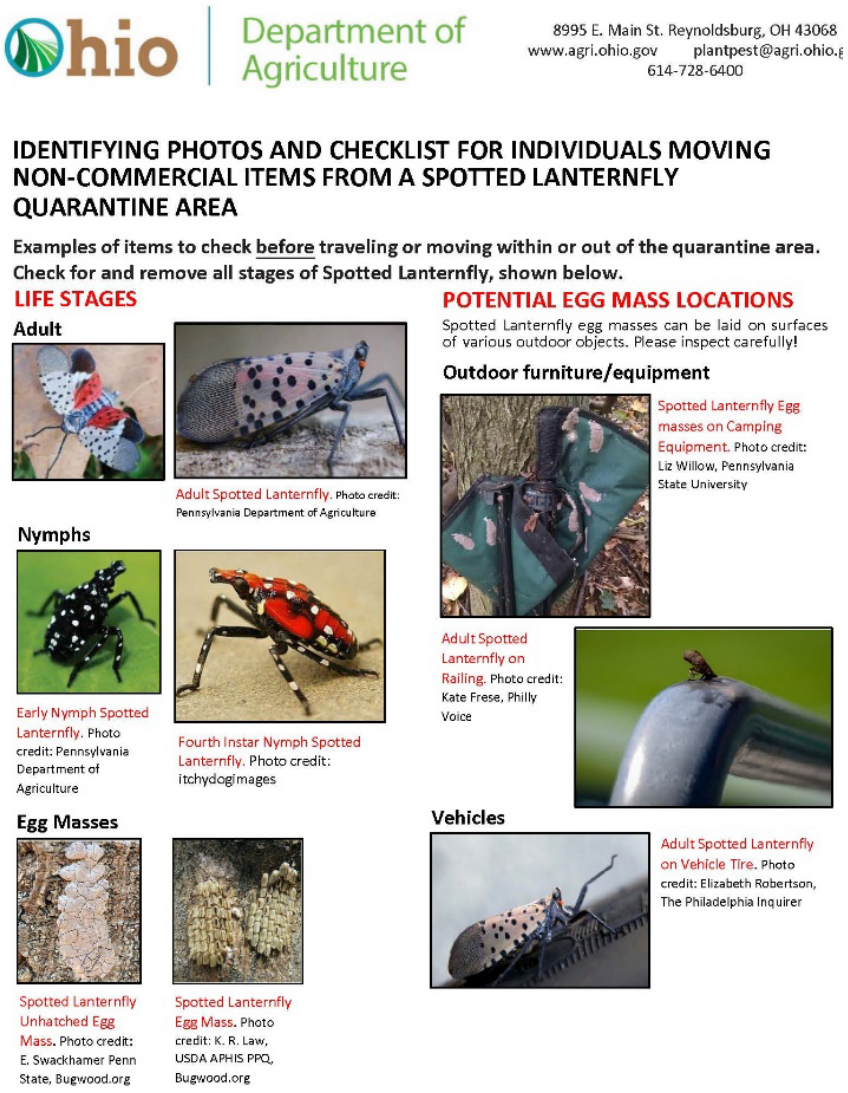
By: Amy Stone Thomas deHaas
Source: https://bygl.osu.edu/index.php/node/1892

On Thursday, October 28, 2021, the Ohio Department of Agriculture (ODA) announced a quarantine to combat the spread of the Spotted Lanternfly (SLF). This BYGL Alert includes information from their release about the new quarantine.

SLF is now designated a destructive plant pest under Ohio law, which increases inspections and restricts movement of certain items from infested counties in Ohio and other states into non-infested Ohio counties. SLF can spread long distances quickly by people who move infested materials or those containing egg masses.

Currently, SLF is only known to be established in Jefferson and Cuyahoga counties. Individuals traveling from an SLF infested area with items including tree branches, nursery stock, firewood, logs, or other outdoor items that pose a high risk of spreading the pest, are asked to complete a self-inspection checklist on ODA's website.

Nurseries, arborists, loggers, and other commercial activities may need to be covered by a compliance agreement in order to ship certain products out of infested counties. Please call 614-728-6400 for more information about compliance agreements for commercial activities.



Ohio | Department of Agriculture

8995 E. Main St. Reynoldsburg, OH 43068
www.agri.ohio.gov plantpest@agri.ohio.g
614-728-6400

IDENTIFYING PHOTOS AND CHECKLIST FOR INDIVIDUALS MOVING NON-COMMERCIAL ITEMS FROM A SPOTTED LANTERNFLY QUARANTINE AREA

Examples of items to check before traveling or moving within or out of the quarantine area. Check for and remove all stages of Spotted Lanternfly, shown below.

LIFE STAGES

Adult

Adult Spotted Lanternfly. Photo credit: Pennsylvania Department of Agriculture

Nymphs

Early Nymph Spotted Lanternfly. Photo credit: Pennsylvania Department of Agriculture

Fourth Instar Nymph Spotted Lanternfly. Photo credit: itchydogimages

Egg Masses

Spotted Lanternfly Unhatched Egg Mass. Photo credit: E. Swackhamer Penn State, Bugwood.org

Spotted Lanternfly Egg Mass. Photo credit: K. R. Law, USDA APHIS PPQ, Bugwood.org

POTENTIAL EGG MASS LOCATIONS

Spotted Lanternfly egg masses can be laid on surfaces of various outdoor objects. Please inspect carefully!

Outdoor furniture/equipment

Spotted Lanternfly Egg masses on Camping Equipment. Photo credit: Liz Willow, Pennsylvania State University

Adult Spotted Lanternfly on Railing. Photo credit: Kate Frese, Philly Voice

Vehicles

Adult Spotted Lanternfly on Vehicle Tire. Photo credit: Elizabeth Robertson, The Philadelphia Inquirer

Ohio | Department of Agriculture

Spotted Lanternfly Checklist for Self-Inspection

Please be sure that you have inspected all applicable outdoor items and objects that appear on the list below before traveling and transporting them from a quarantined area.

PLANTS (LIVE OR DEAD)
- ☐ Trees / shrubs
- ☐ Nursery stock
- ☐ Budwood
- ☐ Lumber
- ☐ Logs
- ☐ Perennial plants
- ☐ Garden plants and produce
- ☐ Indoor houseplants exposed to outdoor environment
- ☐ Stumps
- ☐ Roots
- ☐ Branches
- ☐ Firewood
- ☐ Mulch
- ☐ Composted and non-composted chips, bark, and yard waste

OUTDOOR INDUSTRIAL AND CONSTRUCTION MATERIALS, EQUIPMENT AND WASTE
- ☐ Concrete barriers or structures
- ☐ Stone
- ☐ Quarry material
- ☐ Ornamental stone or concrete
- ☐ Bricks / cinder blocks
- ☐ Wood
- ☐ Roofing materials
- ☐ Workbenches
- ☐ Cement mixing tubs
- ☐ Tools and toolboxes
- ☐ Pipes
- ☐ Skid steers / forklifts
- ☐ Construction, landscaping, and remodeling waste

SHIPPING AND STORAGE CONTAINERS
- ☐ Pallets
- ☐ Cardboard and wooden boxes
- ☐ Personal moving containers
- ☐ Barrels
- ☐ Plant containers
- ☐ Tanks for propane and oil
- ☐ Trash cans

OUTDOOR HOUSEHOLD ARTICLES
- ☐ Lawn tractors and mowers
- ☐ Mowers decks
- ☐ Grills
- ☐ Grill and furniture covers
- ☐ Tarps
- ☐ Mobile homes
- ☐ Storage sheds
- ☐ Tile
- ☐ Stone
- ☐ Deck boards
- ☐ Fire pits
- ☐ Air conditioners
- ☐ Ladders
- ☐ Shutters
- ☐ Storm / screen doors and windows
- ☐ Outdoor porch or patio furniture
- ☐ Picnic tables
- ☐ Dog houses, rabbit sheds, chicken coops, bird houses / feeders, etc.
- ☐ Fencing
- ☐ Garden tools
- ☐ Wheelbarrows
- ☐ Trellises

CONVEYANCES
- ☐ Cars
- ☐ Trucks
- ☐ Trains
- ☐ Recreational vehicles
- ☐ Boats
- ☐ Motorcycles
- ☐ Trailers, wagons, or other equipment
- ☐ Snowmobiles
- ☐ Bicycles
- ☐ Campers
- ☐ Tires

AGRICULTURAL EQUIPMENT
- ☐ Tractors and trailers
- ☐ Harvesting equipment
- ☐ Backhoes
- ☐ Rigid containers
- ☐ Shipping containers
- ☐ PODS
- ☐ bins

CHILDREN'S OUTDOOR PLAYTHINGS
- ☐ Bicycles, tricycles, scooters
- ☐ Playhouses
- ☐ Sandboxes
- ☐ Swing sets
- ☐ Tire swings
- ☐ Wagons
- ☐ Kiddie Pools

OTHER
- ☐ _____
- ☐ _____

Please print name, sign, date, and keep this checklist in your vehicle.

I have inspected those items I am moving from the Spotted Lanternfly quarantine area, and I do not see any Spotted Lanternfly egg masses or other life stages in or on anything I am moving.

*Name*_____ *Signature*_____

Address

_____

(Street, City, & State from where items were moved)

*Email*_____ *Date*_____

The Spotted Lanternfly is native to Southeast Asia and was first found in Ohio in Mingo Junction in October 2020. It was later found in Cuyahoga County in September of this year. ODA has been working with the U.S. Department of Agriculture, Ohio Department of Natural Resources, Ohio State University Extension, and the Ohio Grape Industries Committee on visual surveys, insect trapping, and outreach.

The Spotted Lanternfly was first detected in eastern Pennsylvania in September 2014 and was likely brought to the U.S. by imported goods. There are now established populations of SLF throughout New England and the mid-Atlantic states.

This pest is a great concern to the grape and wine industry. It is fond of grapevines, fruit trees, hops, blueberry, oak, pine, poplar, and walnut. Adult SLF are attracted to the invasive Ailanthus tree, also known as tree-of-heaven, while nymphs feed on a wide range of hosts. Both adults and nymphs feed on stems and leaves, causing sap bleeding and reduced photosynthesis, which can eventually kill the plant.

The public is the first line of defense against the SLF. Adult SLF will remain active through the first frost. These adult plant hoppers are roughly one inch in size, have

black bodies, and colorful red and black wings. If you believe you have seen this pest in your area, please go to the ODA's website at https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/invasive-pests/slf to fill out a suspected infestation report that should include photos, or an actual specimen of the insect. You can also report suspect finds using the Great Lakes Early Detection App that was developed to report an invasive species, including the SLF.

Trumbull County Fall 4-H Kickoff!

Trumbull County 4-H is helping youth find their spark in 2021-2022 through leadership and hands-on learning experiences! Want to learn more? Come join us for the 7th Annual Trumbull County 4-H Kickoff on Monday, November 15th at the Champion Presbyterian Church from 6:00-8:00 p.m. The 4-H Kickoff is a FREE event for all ages and is sponsored by the Trumbull County 4-H Advisory Committee. 4-H youth and volunteers are excited to share club information, showcase annual projects and share activities. Whether youth are interested in joining an animal related club or are interested in a non-animal project such as shooting sports, creative arts, family consumer sciences & more, this event will be sure to get them off on the right foot with joining our county program. Light refreshments will be provided to attendees as well as door prizes and an informational take home bag for each family. We look forward to having you and hope to see you there!

Strategic Tillage Has Its Place in No-Till Agriculture

By Megan Sever
Source: https://acsess.onlinelibrary.wiley.com/doi/full/10.1002/crso.20150

No-till farming has gained momentum over the past few decades as a key part of conservation agriculture. By 2015–2016, more than 444 million acres of farmland globally were under no-till—that's 12.5% of total farmland. And no-till agriculture has been increasing by nearly 26 million acres per year globally. Some 25–30% of cropland in Nebraska is in continuous no-till agriculture.

No-till provides myriad benefits, from decreased soil erosion and decreased costs and energy use to better conservation of water. When compared with conventional tillage, no-till can significantly increase crop yields as well, especially in semiarid regions. But problems can arise with no-till systems, such as buildup of herbicide-resistant weeds, soil compaction, runoff of dissolved nutrients and herbicides, and soil nutrient stratification. Some of these challenges can be solved by introducing cover crops, diversifying cropping systems, and other management practices. But for more persistent challenges, a well-chosen one-off till job, often called strategic tillage, can be just what the doctor—or CCA—ordered.

Strategic tillage in on a Brazil farm. Photo courtesy of Bruno Montoani Silva and Devison Souza Peixoto

What Is Strategic Tillage?

No-till agriculture is just that: No mechanical soil disturbance of any type occurs. Strategic tillage—also called occasional tillage, one-time tillage, targeted tillage, or single-inversion tillage—involves tilling on an occasional basis, like once every 5 or even 10 years, or it might mean tilling once and not again. It differs from conventional tillage and short-term tillage in frequency (every year and every couple of years, respectively). It's not to be confused with reduced tillage, which generally refers to some regular shallow tillage with little soil inversion. Strategic tillage can be done with any method—moldboard plows, chisels, disks, or anything else—at any depth.

Many no-till farmers are adamant that any tillage would ruin years of soil regeneration gained by not tilling, so the very idea of introducing strategic tillage has caused a bit of an uproar, says **Charles Wortmann**, a soil management specialist and agronomist with the University of Nebraska–Lincoln (UNL). In 2020, Wortmann, along with UNL colleague **Humberto Blanco**, an applied soil physicist, published a **review paper** on strategic tillage's effects on no-till fields in *Soil & Tillage Research*. The research does not bear out the notion that strategic tillage will ruin the benefits of no-till, Wortmann says. Research around the world "has shown that, yes, [strategic tillage] can be done without significant harmful effects," he says. And in fact, he adds, "you're more likely to have a yield increase than decrease."

Another 2020 study looked at the effects of tilling once in a long-term no-till system and found "that a single tillage does not negatively affect crop productivity compared to a continuous no-till system," wrote Kansas State University's **Alan Schlegel** and his team in *Agronomy Journal* (**https://doi.org/10.1002/agj2.20284**).

That's ostensibly good news, Wortmann says. "But the big question is, do you have a sufficient reason to [do strategic tillage]?"

Why Use Strategic Tillage?

Strategic tillage can help with many challenges, such as increasing soil carbon at depth, reducing crop residue accumulation, and reducing nutrient stratification. But the two most likely reasons for introducing strategic tillage in a no-till system are herbicide-resistant weeds and soil compaction problems.

In one **meta-analysis** of 68 articles, published in *Science of the Total Environment* in 2020, **Bruno Montoani Silva** and colleagues at the Federal University of Lavras in Brazil reported that strategic tillage was carried out to improve soil physical conditions (especially compaction) in 66% of the cases they examined. Weed control accounted for 17% of cases, nutrient stratification for 12%, and improving soil fertility by applying limestone or other fertilizers at depth for 5%. Soil compaction may be the biggest reason to use strategic tillage globally, but Blanco notes that in the U.S., it's resistant weeds.

Resistant Weeds

"If you have a difficult-to-control weed such as a perennial that is resistant to herbicides … with the right type of tillage, you can knock it out,"

Wortmann says. Worldwide, more than 40 weed species have developed resistance to glyphosate, including foxtail barley, downy brome, amaranth, pigweed, and common waterhemp. Other weeds like bunchgrasses or tree species like Siberian elm can also wind up in fields and can be difficult to eliminate, Wortmann notes. Dozens of weeds have developed resistance to other herbicides. A **study** presented at the Agricultural and Applied Economics Association's 2018 annual meeting noted that due to resistant weeds in no-till agriculture, there was a 9.2% decrease in no-till across the U.S. So resistant weeds are having an effect.

Kochia and pigweed dominating winter wheat in western Kansas. A recent study noted that due to resistant weeds in no-till agriculture, there was a 9.2% decrease in no-till across the U.S. Photo by Anju Giri.

The right kind of tillage, including the right depth and timing, is important, Wortmann says. The right tillage would disrupt weed germination and growth, thus decreasing weed populations. The effects seem to last five years or more, Blanco and Wortmann

reported. Silva and his team found that in no-till managed areas, strategic tillage decreased the number of weeds by 70%.

Compaction

Compaction can occur for many reasons, especially in glacial till and other clayey soils, but one of the biggest reasons is traffic—driving over it. In such a case, Wortmann says, tillage is probably the best bet, and farmers would probably only need to till once to solve the problem. Farmers must be careful in when and how they till, though, he cautions. The soil needs to be pretty dry, so it can fracture in a shattering pattern. If the soil is wet, the shattering effect does not occur, and the tillage may actually increase compaction.

Compaction also occurs over time in soils that haven't been tilled in decades, such as in Brazil, where most of the millions of hectares of grain production has been in no-till systems for 40-plus years, Silva says. In addition, he says, other methods of controlling compaction, like crop rotation and letting a field fallow, aren't being used regularly, due to climatic or market effects (such as the price of one of the rotational crops plummeting). In severe cases of compaction, "we do recommend use of the [strategic tilling] technology," Silva says. But before tilling, there needs to be "an adequate diagnosis of compaction." The diagnosis needs to include the depth and thickness of the compacted layer. Without such a diagnosis that reveals a real need, he adds, "the use of mechanical intervention in the soil is discouraged."

Other Benefits

Although strategic tillage can be effective for weed control and compaction, Blanco, Wortmann, and Silva agree that farmers should not use the technology *just* for one reason, regardless of the reason. If a farmer has a compaction or weed problem, combined with another problem for which strategic tillage can be helpful, then it can be a good option, Blanco says.

Strategic tillage has been shown to increase soil carbon at depth. In no-till systems, organic carbon can build up in the upper few centimeters of the soil surface but be depleted below. The same thing happens with phosphorus and other nutrients and herbicides. In no-till systems, immobile nutrients can sit on the surface or seep a little way into the soil profile, leaving soil below virtually void of the nutrients. One deep-inversion tillage can mix that soil and eliminate the stratification. (Shallow or noninversion tillage are not likely to have much effect.) Research shows that phosphorus uptake by crops increases after just one till. Mixing in herbicides also helps decrease pollutant runoff. One deep-inversion tillage can also be used to incorporate a soil amendment like limestone or manure at depth as well as to reduce crop residue accumulation at the surface. And a well-designed till can help with water infiltration and porosity.

How to Use Strategic Tillage

Although Blanco, Wortmann, and Silva all caution against using strategic tillage inappropriately, they all recommend it as part of the “portfolio of options, or the various tools in the toolbox,” as Blanco puts it. The available research data say using occasional tillage can help.

That said, Blanco says, “Strategic tillage should maybe be the last tool in the toolbox—the last resort.” That’s because the research indicates that yield benefits are minimal, except in cases where herbicide-resistant weeds, compaction, or other problems have reduced yields; they are unlikely to make up for the costs. There are also some risks, including erosion and somewhat decreased microbial activity though not to an agronomically detrimental level, Wortmann says.

Farmers must be careful in when and how they till. If the soil is wet, the soil will not fracture in a shattering pattern, and the tillage may actually increase compaction. Photo by JJ Gouin/Alamy Stock Photo.

Certified Crop Advisers counseling farmers should first ask the farmer what other remedies they have tried for their specific problem. Did they try forage crops instead of row crops, for example? How about cover crops? How about decreasing traffic on the field, especially when the soil is wet? If a farmer has exhausted all other options and can solve multiple problems in a field by tilling, then go for it, Wortmann says. But make sure the problems are well diagnosed and that the best timing, tillage method, and tillage depth are observed. And apply manure or lime or another nutrient during the tillage or find another way to further help the soil. Basically, he says, use strategic tillage when you can get multiple benefits from it.

More Research Needed

Even though research so far indicates that strategic tillage doesn’t usually negatively affect fields, more studies are needed, Blanco and Wortmann noted in their paper. Researchers need to look more carefully at how strategic tillage affects specific soils or fields, Blanco says. Different climates, soil types, depth and method of tillage, soil moisture conditions, and more could all affect results.

I

t would also be helpful to do more economic analyses, he says: “If strategic tillage isn’t significantly increasing yield, then why are we doing it?” We need to see additional benefits, he says. One might be carbon sequestration. Early research suggests that tilling organic-carbon-rich topsoil deeper can bury carbon to deeper depths and may

allow the newly tilled soil to take up more carbon dioxide from the atmosphere, he notes. That would have dual benefits: increasing the carbon throughout the soil profile and sequestering it from the atmosphere.

“This is something that needs to look at more in depth,” Blanco says.

Upcoming Programs

- Farm Record Keeping 101 – December 9th 6:30 PM
- Beef Quality Assurance – Portage – December 13th 4:00 PM

THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Lee Beers
Trumbull County Extension
520 West Main Street
Cortland, OH 44410
330-638-6783
beers.66@osu.edu
trumbull.osu.edu

Andrew Holden
Ashtabula County Extension
39 Wall Street
Jefferson, OH 44047
440-576-9008
holden.155@osu.edu
ashtabula.osu.edu

Angie Arnold
Portage County Extension
705 Oakwood St., Suite 103
Ravenna, OH 44266
330-296-6432
arnold.1143@osu.edu
portage.osu.edu

BLOOMFIELD LIVESTOCK AUCTION

BQA CERTIFICATION CLASSES

Beef Quality Assurance™

WEDNESDAY OCTOBER 20TH,2021 @ 6PM

WEDNESDAY NOVEMBER 10TH. 2021 @ 6PM

AT THE BLOOMFIELD LIVESTOCK AUCTION

For More Information Please Call the Office @ (440) 685-4487

2211 Kinsman Rd. NW North Bloomfield OH 44450

BLOOMFIELD LIVESTOCK AUCTION

CFAES

OHIO STATE UNIVERSITY EXTENSION

Farm Record Keeping 101

Office Mess to Management Success

Thursday, December 9th, 2021 - 6:30 P.M.

Are you looking to improve your records for your agribusiness? Many people would like to keep better records, but don't know where to start. The Farm Record Keeping 101 program can be that first step towards keeping better records, having a cleaner office, and making more informed management decisions. The program is designed for both those starting out and those who want to improve their current records system.

During this program we will discuss the importance of keeping good records on your farm or agribusiness. We will also go over best practices and record keeping strategies, as well as what to avoid. No matter your current style of record keeping we will provide ways to improve it. Online, digital, and paper resources will all be discussed.

Location: Ashtabula County Extension Office – 39 Wall Street, Jefferson, OH 44047

Cost: There is no cost to attend this event

Registration and Contact information: As seating may be limited and to plan for handouts, please RSVP by **December 7th.** To register for this event, please contact the Ashtabula County Extension Office at 440-576-9008, or email Andrew Holden at Holden.155@osu.edu

CFAES

The Ohio State University Extension Portage County

Beef Quality Assurance Certification

Monday December 13th • 4-5PM

BQA covers a multitude of topics, including carcass quality, injection protocol, and animal handling, and will ultimately impact your success at marketing . Join us December 13th to gain your BQA Certification or to recertify your existing Certification.

DATE: December 13th
TIME: 4 – 5PM
LOCATION: Portage Soil and Water, 6970 St. Rt 88 Ravenna, OH 44266
COST: $10

To Register: 330-269-6432 or go to https://go.osu.edu/portagebqa

---

Registration Information: Registration includes program and handouts. Please mail to 705 Oakwood St. Suite 103 Ravenna, OH 44266 The Program is filled on a "first come, first serve basis".

Name: _____

Address: _____

Email: _____ Phone: _____

Number Attending ($10): _____

THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Beef Quality Assurance

Portage.osu.edu