

**COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES****July 6 (Edition #154)**

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**Coshocton County Extension**  
724 South 7<sup>th</sup> Street, Room 110  
Coshocton, Ohio 43812  
Phone: 740-622-2265  
Fax: 740-622-2197  
Email: [marrison.2@osu.edu](mailto:marrison.2@osu.edu)  
Web: <http://coshocton.osu.edu>

Hello Coshocton County! I hope you all had a great 4<sup>th</sup> of July weekend! What a welcomed sight to see rain in the forecast for much of the week. The 0.6 inches at our place over the past day has already done wonders.

Wheat harvest is underway across the county and most of the first cutting hay has been made. Ironweed is present in many of our pastures so some may be interested in the ironweed article in today's newsletter. World events continue to provide a pessimistic outlook for many. Purdue's Ag Economy Barometer has fallen to its lowest level since the coronavirus pandemic began (see 3<sup>rd</sup> article). We also continue to watch the conflict in the Ukraine and its impact on the global economy.

We have seen a lot of diagnostic samples in our office recently including a magnolia sample impacted by the yellow poplar weevil which is described in the final article in today's newsletter.

Stay cool and hydrated this week as it is going to be a muggy one!

Sincerely,

*David L. Marrison*

Coshocton County OSU Extension ANR Educator

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

## Weather Update: A Dry Trend, Interrupted?

By: Aaron Wilson

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2020-21/weather-update-dry-trend-interrupted>

### Summary

After a wet spring, June took a turn toward much drier conditions. Figure 1 shows that a large swath of the state only received 50-75% of normal precipitation, despite derechos and numerous pop-up thunderstorms throughout the month. Though locations around the state set both daytime maximum and nighttime warmth records, we also experienced several cool mornings due to dry conditions. This left the state running about 1-2°F above average for the month. The recent dry conditions have led to rapid drying of soils with reports of cracking, lawns turning brown, and crop stress including rolled corn and slow growth of soybeans. For the latest up-to-date conditions, seasonal outlooks, and monthly climate summaries, please visit the [State Climate Office of Ohio](#).

### Forecast

A ridge of high pressure has set up to our southwest. This will leave Ohio in northwesterly flow on the northeast side of this high pressure. Temperatures will start out close to 90°F before cooling off into the mid-80s later in the week. Humidity will run high all week. Clusters of showers and storms will traverse the region, much like Monday, bringing repeated rounds of beneficial rain across the region. While the exact timing and location of each cluster is unknown far in advance, rainfall will add up over the course of the week. The [Weather Prediction Center](#) is forecasting a large area of 1.5-3.0", lesser amounts in the far northeastern counties over the next 7 days.

The [Climate Prediction Center's](#) 6-10-day outlook for the period of July 11 - 15, 2022 and the [16-Day Rainfall Outlook from NOAA/NWS/Ohio River Forecast Center](#) show average temperatures and precipitation are expected (Figure 3). Climate averages are nearing their annual peak during this period include a high-temperature range of 83-87°F, a low-temperature range of 62-66°F, and average weekly total precipitation of 0.85-0.90 inches.

Accumulated Precipitation (in): Percent of 1991-2020 Normals  
June 06, 2022 to July 05, 2022

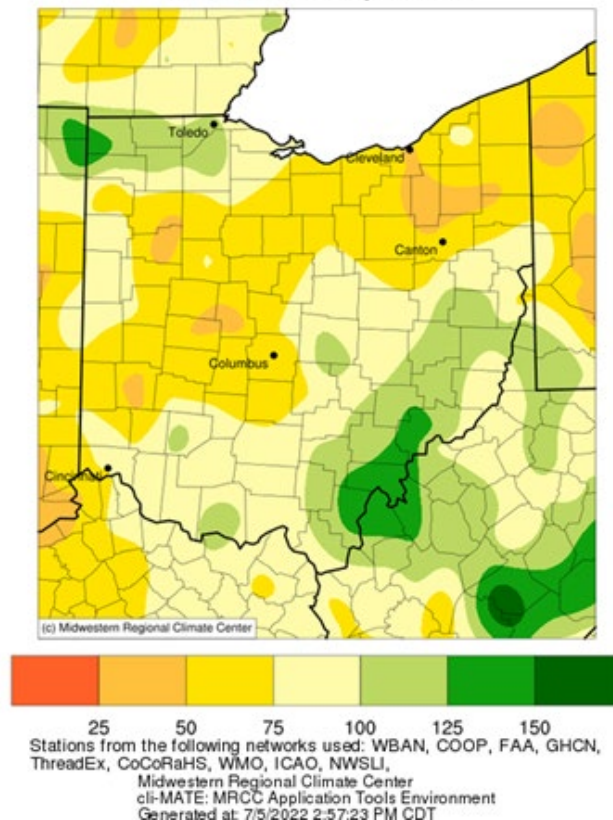


Figure 1). Percent of normal precipitation for the last 30 days. Figure courtesy of the Midwestern Regional Climate Center (<https://mrcc.purdue.edu>).

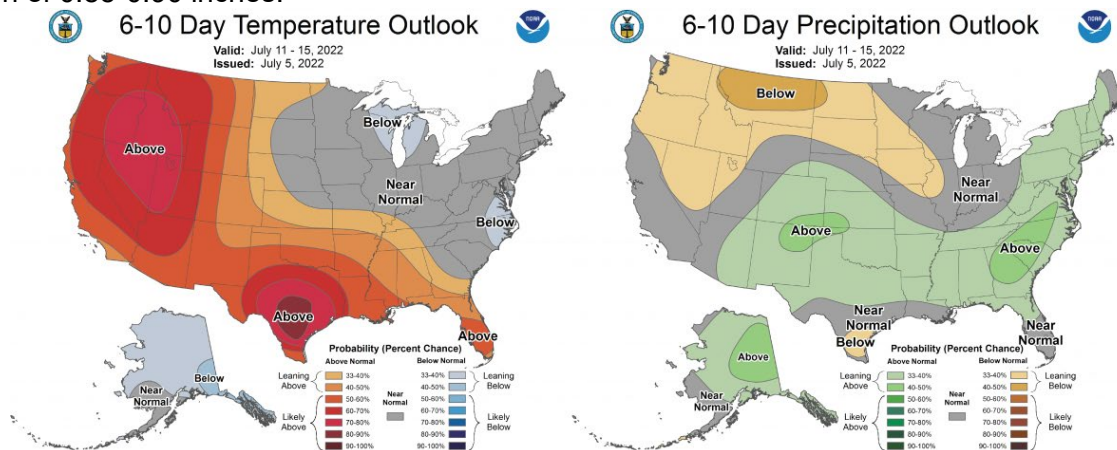




Figure 3) Climate Prediction Center 6-10 Day Outlook valid for July 11 – 15, 2022, for left) temperatures and right) precipitation. Colors represent the probability of below, normal, or above normal conditions.

## **Wheat Harvest Date Reminders**

By: Laura Lindsey & Pierce Paul

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2020-21/wheat-harvest-date-reminders>

While many areas of Ohio have already successfully harvested wheat, there are fields that still need to be harvested. With rainfall this week, harvest may be delayed. Late harvest coupled with excessive rainfall means more time for late-season mold growth, mycotoxin accumulation, test weight reduction, and sprouting; all of which could result in poor overall grain quality. In 2018, we evaluated wheat harvested on June 29 (at 12% moisture content) and July 8 (at 14% moisture content). Grain moisture increased between June 29 and July 8 due to 0.58 inch of rainfall between the two harvest dates. When wheat harvest was delayed until July 8, yield decreased by 9 bu/acre, test weight decreased by 2.9 bu/acre, and DON level increased by 0.86 ppm. These reductions in yield and test weight and increase in DON are likely attributed to re-wetting of dry grain.

Test weight (grain weight per unit volume or grain density) is one of the grain quality traits most likely to be affected by harvest delay and wet conditions. Low test weights usually occur if grain is prevented from filling completely or maturing and drying naturally in the field. Rewetting of grain in the field after maturity but prior to harvest is one of the main causes of reduced test weight. When grain is rewetted, the germination process begins, causing photosynthates (i.e., starch) to be digested. This leaves small voids inside the grain which decreases test weight. Additionally, grain will swell each time it is rewetted and may not return to its original size as it dries which will also reduce test weight. Thus, the enlarged kernels will take more space but weigh the same, allowing fewer kernels to pack in the measuring container, lowering the test weight.



Rain and harvest delay may also lead to pre-harvest sprouting in some varieties. Sprouting is characterized by the swelling of kernels, splitting of seed coats, and germination of seeds (emergence of roots and shoots) within the wheat heads. Some varieties are more tolerant to sprouting than others, and for a given variety, sprouting may vary from one field to another depending on the duration of warm, wet conditions. Sprouting affects grain quality (test weight). Once moisture is taken up by mature grain, stored reserves (sugars especially) are converted and used up for germination, which leads to reduced test weights. Even before visual signs of sprouting are evident, sugars are converted, and grain quality is reduced. Since varieties differ in their ability to take up water, their drying rate, the rate at which sugars are used up, and embryo dormancy (resistance to germination), grain quality reduction will vary from one variety to another.

In addition to sprouting, the growth of mold is another problem that may result from rain-related harvest delay. To fungi, mature wheat heads are nothing more than dead plant tissue ready to be colonized. Under warm, wet conditions, saprophytic fungi (and even fungi known to cause diseases such as wheat scab) readily colonize wheat heads, resulting in a dark moldy cast being formed over the heads and straw. This problem is particularly severe on lodged wheat. In general, the growth of blackish saprophytic molds on the surface of the grain usually does not affect the grain. However, the growth of pathogens, usually whitish or pinkish mold, could result in low test weights and poor overall grain quality. In particular, in those fields with head scab, vomitoxin may build-up to higher levels in the grain, leading to further grain quality reduction and dockage. While vomitoxin contamination is generally higher in fields with high levels of wheat scab, it is not uncommon to find above 2 ppm vomitoxin in late-harvested fields that have been exposed to excessive moisture. Even in the absence of visual scab symptoms, the fungi that produce vomitoxin may still colonize grain and produce toxins if harvest is delayed.

To minimize grain quality losses, it is best to harvest wheat on the first dry-down. Harvesting at a slightly higher

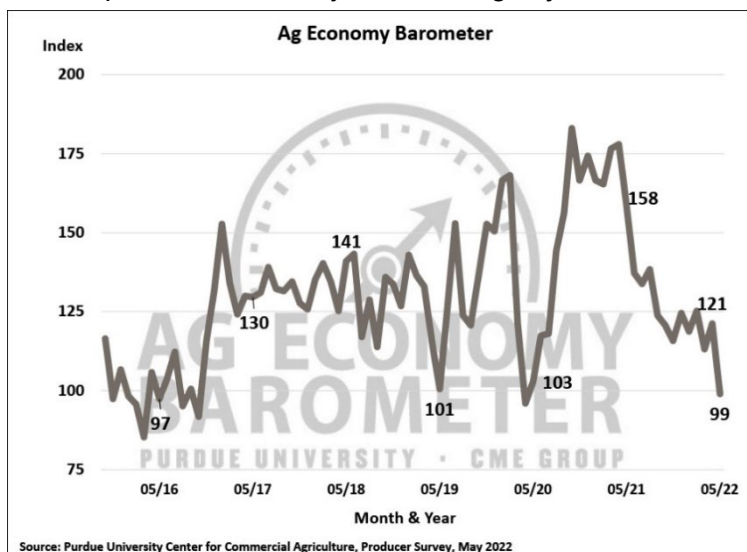
moisture level (18% for example) may also be useful for minimizing quality losses, particularly those associated sprouting and mold growth due to rainfall and harvest delay. However, if grain is harvested at moisture above 15%, it should be dried down below 15% before storage to minimize mold growth and mycotoxins in storage.

## **Farmer Sentiment Plummets as Production Costs Skyrocket**

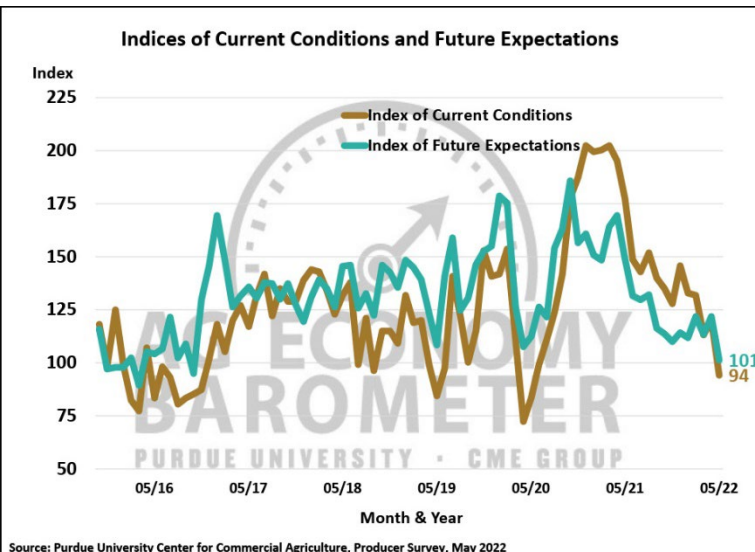
By: James Mintert and Michael Langemeier, Purdue Center for Commercial Agriculture

Source: <https://ag.purdue.edu/commercialag/ageconomybarometer/wp-content/uploads/2022/06/May-2022-Ag-Economy-Barometer-1.pdf>

The Purdue University-CME Group Ag Economy Barometer plummeted in May to a reading of just 99, the weakest farmer sentiment reading since April 2020. The May 2022 barometer reading marked just the 9th time since data collection began in fall 2015 that the overall measure of farmer sentiment fell below 100. Agricultural producers' perceptions regarding current conditions on their farms, as well as their future expectations, both weakened this month. The Index of Current Conditions fell 26 points to a reading of 94, while the Index of Future Expectations declined 21 points to 101 in May. Notably, this month saw a rise in the percentage of respondents who feel their farm is worse off financially now than a year earlier, an indication that escalating production costs are troubling producers. The Purdue University-CME Group Ag Economy Barometer sentiment index is calculated each month from 400 U.S. agricultural producers' responses to a telephone survey. This month's survey was conducted from May 16-20, 2022.



Producers exhibited a much more negative view of their farms' financial situation this month as the Farm Financial Performance Index fell 14 points from April's reading of 95 to 81 in May. The percentage of producers who expect their farm's financial performance this year to worsen compared to last year rose from 29% in April to 38% in May. Responses received to the financial performance question this May were nearly the polar opposite of responses received a year earlier. In May 2022, 38% of producers said they expect worse financial performance for their farms compared to a year earlier with just 19% of respondents expecting better financial performance. This stands in contrast to a year earlier when 42 percent of survey respondents expected better financial performance while just 16% said they thought a worse financial performance was likely. Over the course of the last 13 months, the Index of Farm Financial Performance has fallen 41% below its life of survey high of 138 set in April 2021. The decline points to farmers' lack of confidence in their farms' financial outlook.

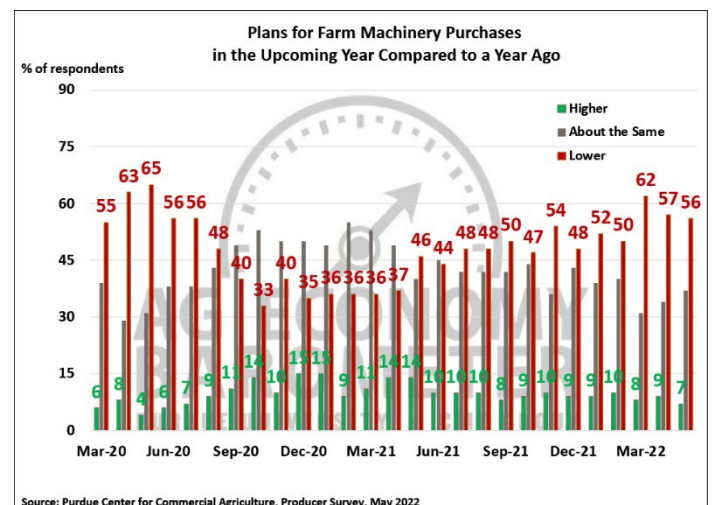
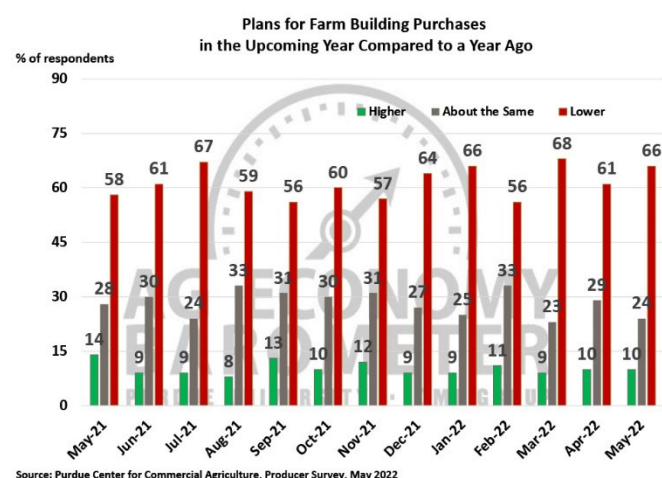
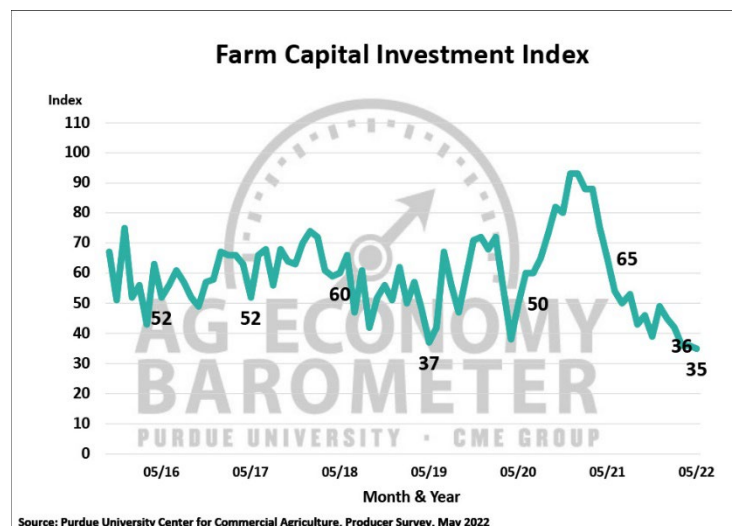
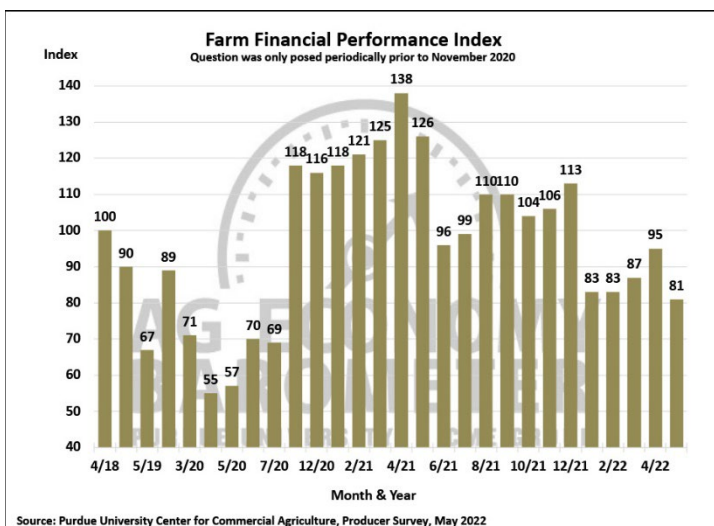


The Farm Capital Investment Index drifted lower in May to 35, a new low for the index. The May reading was down just one point from a month earlier but was 30 points below its May 2021 reading. In this month's survey, only 13% of respondents said this is a good time to make large investments in their operation while 78% said they viewed it as a bad time to invest in things like machinery and buildings. Half of the producers in

this month's survey said their machinery purchase plans were impacted by low farm machinery inventory levels, up from 41% in the April survey, suggesting that supply chain issues are at least partly responsible for the ongoing weakness in the capital investment index.

When asked what their biggest concerns are for their farming operation, once again producers, overwhelmingly (44%), chose higher input costs as the biggest issue facing their farming operation in the upcoming year. Nearly 6 out of 10 (57%) producers said they expect prices paid for farm inputs in 2022 to rise 30% or more compared to prices paid in 2021. The percentage of producers expecting costs to increase this dramatically has risen sharply since the end of 2021, shifting from 38% of producers in December who expected costs to rise by 30% or more to this month's 57% of all respondents. For the second month in a row, the May survey asked producers about their expectations for input costs in 2023 compared to 2022. This month nearly 39% of producers said they expect costs next year to rise 10% or more compared to this year's already inflated costs. Compared to the April survey, fewer producers this month said they expect to see input prices decline next year. In April, 18% of respondents were anticipating lower input prices in 2023, but in May just 12% of producers said they expect input prices to fall back in 2023.

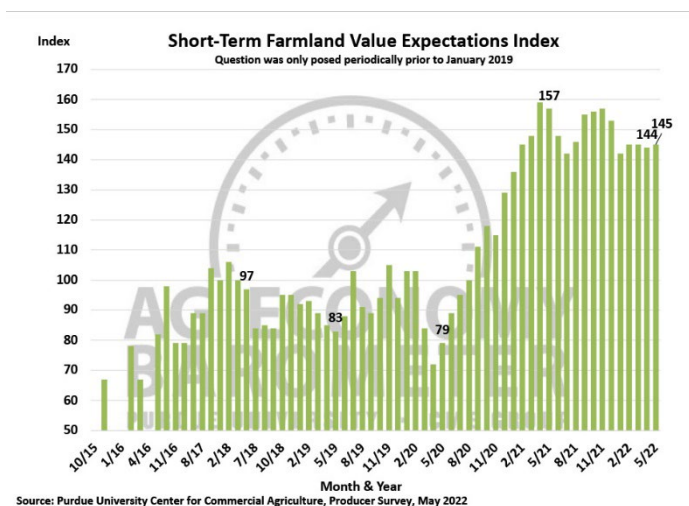
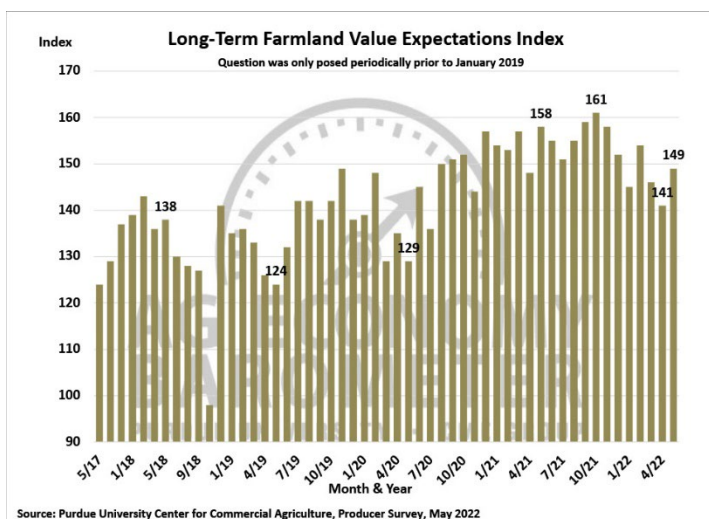
Noticeably fewer producers this month reported having difficulty purchasing crop inputs for the 2022 crop season than in prior surveys. In the May survey, one out of five (19%) producers said they had difficulty purchasing inputs for the 2022 crop season, down from an average of 32% who reported difficulties in the December through April surveys. Among those producers who still reported difficulties, problems were apparent in all major input categories including herbicides, farm machinery parts, fertilizer and insecticides.





Despite the weak sentiment expressed by farmers regarding their farms' financial performance, producers remain relatively optimistic about farmland values. The Long-Term Farmland Value Expectations Index, based upon producers' farmland outlook over the upcoming 5 years, rose 8 points in May to a reading of 149. This month's reading takes the long-term index back to its pre-pandemic (February 2020) level. The Short-Term Farmland Value Expectations Index, based upon producers' 12-month outlook, at a reading of 145 was virtually unchanged from a month earlier. The short-term index has been range-bound throughout 2022, fluctuating between 142 and 145. Both the short and long-term farmland indices in May were 7 to 8% below the peak levels attained last fall.

The contrast between farmers' relatively optimistic view of farmland values and their expectations for weak farm financial performance continues to be a bit of a puzzle. For the last several months, our monthly survey has included a follow-up question posed to respondents who expect farmland values to rise over the next 5 years, asking them about the main reason they expect values to rise. Respondents have consistently chosen non-farm investor demand as the top reason followed closely by inflation. Interestingly, few respondents chose strong farm cash flows or low interest rates as the main reason they expect farmland values to rise.



The war in Ukraine has disrupted food production and distribution leading to serious concerns about the availability of food supplies, especially in importing countries. Wheat supplies and prices are of special concern because many low-income countries are reliant upon wheat imports from the Black Sea region. Multiple policy proposals have been discussed in the U.S. as a means of encouraging more wheat production. This month's survey included several questions focused on crop producers' wheat production plans and how they might respond to policy proposals.

Approximately 39% of the respondents to this month's survey said they have used a wheat/double-crop soybean crop rotation at some time in the past. Twenty-eight percent of the producers who have experience with a wheat/double-crop soybean rotation said they plan to increase the percentage of their farms' cropland devoted to this rotation by planting more wheat in fall 2022. The shift towards increasing wheat acreage is likely the result of the expected profitability improvement of the wheat/double-crop soybean rotation.

One of the policy proposals discussed by the Biden administration is a \$10/acre double-crop soybean crop insurance subsidy to make this crop rotation more attractive to producers. This month's survey asked respondents if the subsidy would encourage them to plant more wheat in fall 2022 than would otherwise be the case. Among producers who have employed a wheat/double-crop soybean rotation in the past, just over one in five (22%) said it would encourage them to plant more wheat. Among producers who have not followed a wheat/double-crop soybean rotation in the past, just one out of ten producers said the insurance subsidy would encourage them to plant more wheat this fall.

## Wrapping Up

Farmer sentiment plummeted in May as the Ag Economy Barometer dipped to its lowest level since the early days of the pandemic in spring 2020. Despite strong commodity prices, producers are very concerned about their farms' financial performance in 2022. Weakness in producers' sentiment appears to be driven by the rapid rise in production costs and uncertainty about where input prices are headed. Fewer producers this month said they experienced difficulty in purchasing crop inputs than reported having difficulty throughout the winter and early spring, suggesting that input availability did not impact planting progress this spring. Despite concerns about farm financial performance, producers remain relatively optimistic about farmland values, largely because of expectations for strong non-farm investor demand and inflation. Finally, this month's survey suggests that producers with wheat/double-crop soybean experience plan to increase their wheat acreage in fall 2022.

## **Ukrainian Farmers Destroy Harvest Equipment to Keep Russians from Taking Crops**

By [Rhonda Brooks](#)

Source: <https://www.agweb.com/news/crops/wheat/ukrainian-farmers-destroy-harvest-equipment-keep-russians-taking-crops>

Few things are more important to a farmer than harvesting his crops, yet farmers in the Ukraine are taking measures to prevent that very action. Many are now destroying harvest equipment to keep the Russian army from confiscating the wheat currently ripening in fields.

"Some of our clients in the Ukraine have been actually damaging their combines, so the Russians can't combine the wheat," says Dan Basse, president of AgResource Company. "It's a war zone. It's messy. It's a shame, and our hearts bleed for the Ukrainians who are being harmed," Basse told AgriTalk host Chip Flory on Monday.

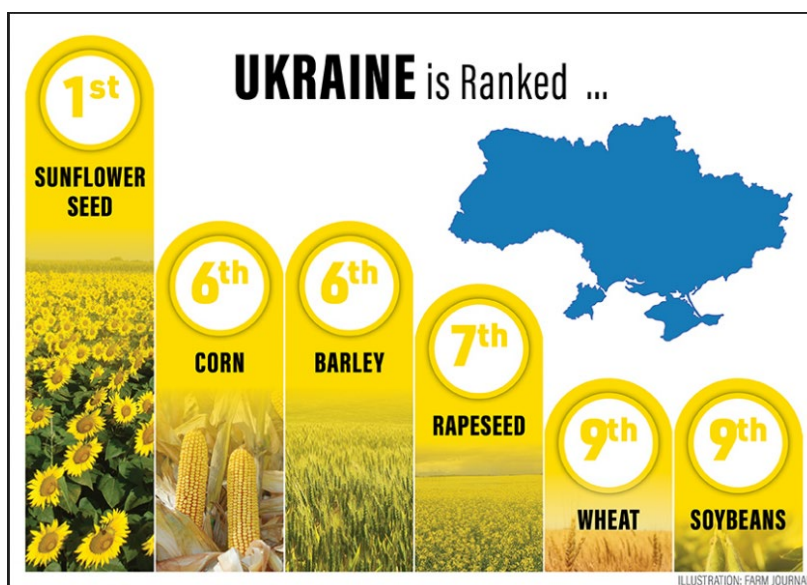
### **Little Fuel To Be Had**

In recent days, the Russian army has bombed refineries, seaports and many other parts of the country's infrastructure, crippling it and turning it into rubble. Basse estimates that at least three, maybe four, of the seven major export terminals out of the Ukraine have sustained such major damage months of work would be required to repair them.

The destruction means that even if farmers have kept their equipment intact, many are unable to access much needed diesel to fuel the harvest. "If you were to place a diesel order today in the wheat areas, which is really central and western Ukraine, you would find that it's probably four to six weeks to get delivery on it," Basse says. The delay means some of the crop will likely remain in fields too long, damaging its quality and viability, and some of the crop won't be harvested at all.

That reality would mean supplies of wheat would take a significant hit in the global marketplace. It's also why Basse challenges the USDA's current prediction that Russia will export 40 million metric tons (mmt) of wheat this year and somehow compensate for the shortfall from the Ukraine.

"A lot of the people I talked to in Europe have that number closer to 30 mmt, which would leave the world short 10 mmt of wheat," he says. "As Russia begins its harvest, we'll start to understand that it is not going to have a big export campaign. I'm afraid it's a pipe dream, if you will, I just don't think logistics will allow it." What countries will be shorted of wheat and, potentially, other grains? Basse says he is still working to figure



that out. For now, he believes the shortfall is likely to occur in countries such as Bangladesh, Pakistan and/or parts of Southeast Asia. He doesn't believe the U.S. will be in that mix.

"There will be some shortages, and it seems to me that if I'm an end user, I probably should be taking some forward coverage," he says. "We think (demand destruction) will be shifted forward, because people are still eating about the same amount of calories as it sits today at these current prices."

### **Seasons Of Loss**

As for Ukrainian farmers, Basse is worried what will happen to some of them if crops can't be harvested and sold. "Financing is running out. I will tell you that as I talk to my friends and clients, we will have farmers that go bankrupt. And then of course, as that happens, we will really have issues with the next wheat crop and the next corn crop. So, I'm actually more concerned about 2023 production than I am about 2022."

In the meantime, he believes Putin will continue to wage war, inflicting as much "pain and harm and psychological damage on Ukrainians as possible." "Ukrainians are such a proud people, as long as we keep sending them weapons, they will fight to the last man standing. That is how angry and riled up they are," Basse adds. "So that's why when we talk about this war going on, as long as the West keeps sending weapons, the war will go on."

### **Ohio Acreage Summary Report**

By: Cheryl Turner, USDA National Agricultural Statistics Service

Source: <https://www.morningagclips.com/ohio-acreage-summary-report/>

Ohio field crop producers planted fewer acres of corn in 2022 than they did in 2021, according to Cheryl Turner, State Statistician, USDA NASS, Ohio Field Office. (Ohio Department of Agriculture).

The 2022 planting season in Ohio began slowly due to cold, wet conditions. Farmers made excellent progress once weather turned more favorable and were able to catch up to the 5-year crop planting averages by Memorial Day.

Ohio field crop producers planted fewer acres of corn in 2022 than they did in 2021, according to Cheryl Turner, State Statistician, USDA NASS, Ohio Field Office. Highlights of the 2022 June Acreage report follow: Ohio corn growers planted 3.40 million acres, down 150,000 acres from 2021. Corn harvested for grain is projected to be 3.17 million acres, down 170,000 acres from the previous year.

Ohio soybean growers planted 4.95 million acres, up 50,000 from 2021. Harvested acres of soybeans are anticipated to be 4.93 million acres.

Ohio winter wheat growers planted 530,000 acres of wheat, 50,000 acres fewer than last year. Area harvested and to be harvested for grain totaled 480,000 acres, down 7 percent from last year.

Nationally, corn planted area for all purposes in 2022 is estimated at 89.9 million acres, down 4 percent or 3.44 million acres from last year. Compared with last year, planted acreage is expected to be down or unchanged in 35 of the 48 estimating States. Area harvested for grain, at 81.9 million acres, is down 4 percent from last year.

U.S. soybean planted area for 2022 is estimated at 88.3 million acres, up 1 percent from last year. Compared with last year, planted acreage is up or unchanged in 24 of the 29 estimating States.

The 2022 winter wheat planted area in the U.S., at 47.1 million acres, up 1 percent from 2021. The 2022 winter wheat planted area, at 34.0 million acres, is up 1 percent from last year, but down 1 percent from the previous estimate. Of this total, about 23.5 million acres are Hard Red Winter, 6.86 million acres are Soft Red Winter, and 3.61 million acres are White Winter.



## ***Happy Retirement to Dianne Shoemaker***

By: [Haley Shoemaker](#), Extension Educator, Agriculture and Natural Resources, Columbiana and Mahoning Counties and [Chris Zoller](#), Extension Educator, Tuscarawas County, Agriculture and Natural Resources, Ohio State University Extension

After more than 30 years with Ohio State University Extension, Dianne Shoemaker, Field Specialist, Dairy Production Economics, is retiring June 30, 2022.

Growing up in Worthington, Ohio didn't exactly lend itself to her being around many dairy farms early on; however, Dianne's interest in cattle and the dairy industry was peaked during regular family visits to Wisconsin. This interest developed into a tangible goal and vision for her career throughout her time as a student at the Ohio State University, where she dove into the world of dairy "boots first" while working at the university dairy farm.



This experience led to a six-month internship in Switzerland milking Simmentals, along with the opportunity to tour with Elsie the cow during her days as an undergraduate student.

Following graduation, Dianne worked as a herds person at a dairy in Highland County and was a DHIA Supervisor before returning to OSU to earn her master's degree. Dianne then began her career with Ohio State University Extension in 1986.

As the first female county ag agent in Ohio, Dianne knew that simply "doing her job" wouldn't cut it. By approaching each task and project with honesty and a refreshing sense of integrity, she quickly earned the trust and confidence of both her co-workers and clientele. It is because of this consistent approach to her work that she has enjoyed a very successful career educating farmers and farm families throughout Ohio. Like many county-based Extension professionals, Dianne has seen a lot over her career and has had to adapt to the everchanging needs of her clientele. In Northeast Ohio in the 1980s and early 90s, that meant switching gears from dairy and milk to a crop most would probably associate with Idaho – potatoes. With limited knowledge of potato production and harvesting, Dianne made numerous farm visits to gain hands-on experience. These farm visits helped her create lasting relationships with farmers that would continue as her career evolved.

Throughout her time in Extension, Dianne has also become known as a visionary leader. At a time of downsizing and restructuring within OSU Extension, Dianne recognized the need to bring together a group of university professionals to address the issues facing Ohio's dairy producers. As a result, the OSU Extension Dairy Working Group was formed and still meets to this day. Under Dianne's leadership, the group has taught numerous educational programs, developed a website to house dairy resources, written fact sheets, conducted team study tours, and produced the popular "Dairy Excel 15 Measures of Dairy Farm Competitiveness" bulletin. This bulletin has been used by farmers and advisors across the United States.

Another example of Dianne's visionary leadership is with the OSU Extension Farm Business Analysis and Benchmarking Program. This program uses a computerized software to analyze the financial performance of farm businesses. Since her start with the program, she has successfully secured grant dollars to aid in the completion of analyses and produce annual statewide dairy and crop financial summaries. In recent years, upon hiring additional technicians, she has also been able to expand the program and continue Ohio's contribution of farm financial data to the national database. This expansion has allowed the program to include more grain farms and crop acres across Ohio, providing vitally important information to a larger segment of Ohio agriculture.

You've likely also seen Dianne's smiling face in the Farm and Dairy newspaper. With approximately 180 articles authored by Dianne published in the Farm and Dairy and numerous others printed in state and national publications, her work has reached far beyond the borders of Ohio agriculture.

Dianne has been recognized by her peers for her outstanding teaching, leadership, and service to her profession, having received the Distinguished Service Award from the National Association of County Agricultural Agents. She also received the OSU Excellence in Extension Award and was recognized as the North Central Region Excellence in Extension Award winner for farm business management education efforts that help dairy farms improve profitability and sustainability.

Dianne has led a storied and distinguished career with OSU Extension and has made a lasting impact with the many colleagues, dairy farms, and farm families who had the pleasure of working with her. It is safe to say that her work has laid a strong and sturdy foundation for those to come; however, filling her shoes will be no easy task.

As for future plans, there will likely be many days spent with family, friends, and spoiling her grandchild! We wish Dianne the best in her retirement, and hope that we can someday look back on our careers with the same pride and sense of accomplishment.

And to Dianne – we thank you for your tireless dedication to OSU Extension and to Ohio's farmers. May your retirement be full of joy, new adventures, and reasons to laugh – you've earned it!

## ***Ironweed Problems and Solutions***

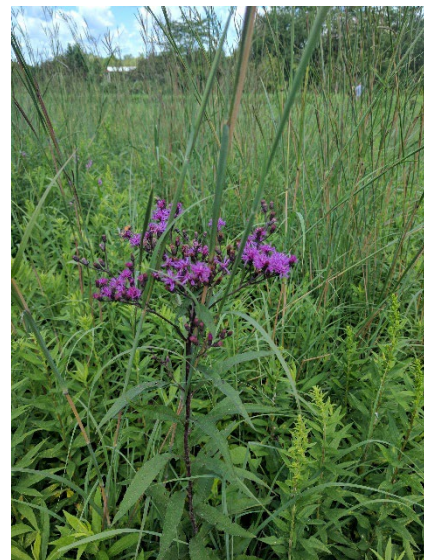
By Christine Gelley, Noble County Extension

Source: <https://u.osu.edu/beef/2022/07/06/ironweed-problems-and-solutions/>

July is the time for questions about ironweed, which is a common native perennial plant from the aster (daisy) family readily found in the Ohio and Mississippi valleys. It grows from three feet up to ten feet tall, depending on the specific species (of which there are seventeen in North America). It generally bears clusters of purple to magenta flowers at the peak of the plant's stalk that are highly attractive to many pollinators.

I am anticipating that you're already thinking something like- "What! It's native!? But it is so awful. I have got to do something about it in my pastures."

It is true that ironweed can become a significant agricultural pest in areas with limited soil disturbance. It is especially displeasing to pasture managers that see it as an eyesore in the pasture mix, towering above the grasses and legumes that most livestock prefer to graze. Ironweed typically gets a start in overgrazed pastures or other disturbed land where open soil allows for seed deposition, germination, and reemergence in the following years.



When ironweed seedlings emerge it can be difficult to tell the difference between it and other common asters such as maretail, Joe-Pye weed, goldenrod, and fleabane. The good news is that all of these asters are pretty responsive to the same controls. The best of which is probably implementing a rotational grazing system with a mixture of livestock species.

Strategic mowing a couple times a year to prevent seed production can be helpful. Tillage can break up the current root system but may also

stir up additional weed seed in the soil bank. Herbicides containing clopyralid, 2,4-D, triclopyr, and/or glyphosate are generally effective either as broadcast sprays, targeted sprays, or through contact with a weed wiper.

Weed wipers are very helpful on flat ground where the implement can be easily pulled through the field at a height above the desirable forage so that only the plants above the forage canopy come in contact with the herbicide-soaked sponge. It is typical for weed wipers to limit herbicide use to one predetermined product because of how difficult it is to remove herbicide residue from the device. Weed wipers can be purchased, rented, or built for a reasonable price.

Targeted grazing can also be employed. Although these plants may not be the first preference for grazing selections, small ruminants including sheep, goats, and deer will often eat seedlings or strip the leaves off the tall stalks.

While ironweed is an easy to spot plant that competes with desired crops for resources, it is less concerning than many of the other weeds we have previously described. It is native and does have pollinator value, so if you have plenty of forage for animals to eat and don't mind how it looks, you could choose to do nothing about it guilt-free. But odds are if you have ironweed growing vibrantly, you probably have additional weeds sharing the space that do warrant control.

When you notice that ironweed is coming on strong, go out, take a walk, and scout for other more problematic weeds like horse nettle and cocklebur that may be hiding below the canopy.

## ***Estate Planning Without Using Wills or Trusts***

By: Robert Moore, Attorney and Research Specialist, OSU Agricultural & Resource Law Program

Source: <https://farmoffice.osu.edu/blog/fri-07012022-922am/estate-planning-without-using-wills-or-trusts>

When we think of estate planning our thoughts usually go to a will or trust. However, in some situations, an effective estate plan can be implemented without the use of a will or trust. Using transfer on death or payable on death beneficiary designations, for some people, can be an adequate estate plan.

A transfer on death or payable on death designation can be added to almost any asset with a title. Transfer on death is used more for tangible assets such as land and vehicles while payable on death is used more for intangible assets such as financial accounts and life insurance. Both designations do the same thing – upon death, ownership is transferred from the deceased to the designated beneficiary outside of probate. This process of transferring ownership at death is usually simple and relatively easy.

The strategy of using beneficiary designations as the primary estate planning tool is best used when the distribution plan of assets is simple. For example, when the deceased's assets will be divided equally among their children. Distribution plans that include more involved schemes such as unequal distributions, buy outs, leases or rights of first refusals are too complicated to use just beneficiary designations. In those situations, a trust-based plan will likely be needed. Using beneficiary designations as the primary estate planning strategy only fits a narrow band of farmers, but for those farmers and it can be an effective and relatively inexpensive plan.

Consider the following example. Mom and Dad's farming operation is an LLC that holds farm machinery,





livestock, and crops. They own 200 acres in their names. Their other assets include a bank account, retirement account and life insurance. At Mom and Dad's death, they want all of their assets to go to their two children equally. Their net worth is \$4 million.

In this example, the first thing to notice is that Mom and Dad are well under the federal estate tax limit. So, their estate plan does not need to be designed around minimizing estate taxes. Second, their plan is simple. Everything goes to their two children equally. Lastly, the assets they own are all titled assets that can include death beneficiary designations.

Mom and Dad can title their LLC ownership transfer on death to the children. Upon their deaths, the LLC ownership interests will transfer to the children outside of probate. The transfer is done with a few pieces of paper. The land can be made transfer on death by recording a Transfer on Death Affidavit. Upon Mom and Dad's death, the children will record an affidavit with a death certificate and title is transferred – again, without probate. The children can be added as the payable on death beneficiaries of the financial accounts and life insurance. After death, the children will file paperwork with the financial institutions and funds will be transferred to them outside of probate. A \$4 million estate has been transferred without the need to use a will or trust and probate has been avoided.

While this strategy does not use a will or trust for the transfer of assets, it is still a good idea to have a will as a backup. In the above example, Mom and Dad execute wills that state all of their assets go to their children equally. The will is there in case a beneficiary designation is in error or an asset is overlooked and must go through probate. The goal is not to use a will but there should be one as a backup just in case Mom and Dad forgot to add a transfer on death designation to the old livestock trailer that they haven't used in five years. The following assets can all have transfer on death or payable on death designations added to their title: vehicles, titled trailers, trucks, boats, real estate, bank accounts, financial accounts, life insurance, stocks, and business entities. Assets such as livestock, grain, crops and machinery are untitled so a transfer on death designation cannot be added. However, transferring those untitled assets into an LLC is a great way to essentially convert untitled assets to titled assets. After the untitled assets are transferred to the LLC, the LLC ownership can include a transfer on death designation.

When considering estate plans, farmers who have relatively simple plans and can add death beneficiary designations to all or most of their assets may not need a complicated will or trust. The beneficiary designations can be the primary estate plan with a simple will as backup. This strategy is effective, minimizes legal costs and avoids probate. As stated above, this strategy is not for everyone, but it should be considered. For more complicated plans or for high-net-worth individuals, a trust may be needed.

## ***The History of American Agriculture***

By Haley Zynda

For Publication in the The Daily Record (Wooster, Ohio)

Source: <https://u.osu.edu/beef/2022/07/06/the-history-of-american-agriculture/>

Happy Independence Day, U.S.A! I hope everyone had a wonderful holiday weekend celebrating our great nation's independence with a good, old-fashioned cookout. To me, one of the best summer meals is a cheeseburger with all the fixings, pasta salad loaded with fresh veggies, and sweet, sun-ripened watermelon. In the midst of the thanks for our country, it's important to also understand and give thanks for the farmers that keep food on our table and our bellies full. As my dad likes to say, "Farming is everybody's bread and butter." With that, let's take a look at the history and statistics of American agriculture. The following is summarized from USDA's "Growing a Nation."

In 1790, 14 years after the Declaration of Independence was signed, the U.S.A was largely an agrarian society, with 90% of the workforce being farmers. The year 1790 is also significant because it is the year that potash was patented for creation by Samuel Hopkins. The formulation hasn't changed but has certainly changed how farmers can deliver nutrients to their crops.

In 1796, the Public Land Act was created to encourage settlers to move west. Plots of a minimum of 640 acres were sold to the public at a whopping price of \$2 per acre. Fifty years later, by 1840, farmers were only 69% of the working population, and a decade later in 1850, down to 64% of the labor force. The average farm size was about 203 acres, and it took almost 90 labor hours to produce 100 bushels of corn. The average yield of corn was 40 bushels per acre, and was produced with a walking plow and harrow. Wheat was even more labor intensive, requiring almost 300 hours to produce 100 bushels over 5 acres of land. By 1850, agricultural exports were also extremely important to the economy, totaling 65% of exports, roughly \$90 million.

Perhaps one of the greatest turning points in American agriculture, was the invention of the horse-drawn reaper in 1831 by Cyrus McCormick, the Father of Modern Agriculture. This piece of equipment allowed for more land to be worked by one person, ultimately increasing farm income and increasing the standard of living for farming families.

The 1800's was also the peak of southern plantations, responsible for growing cotton, sugar, rice, and tobacco. Cotton growers and Eli Whitney's invention of the cotton gin made the south increasingly reliant upon slave labor. The Civil War ended slavery in 1865.

However, in 1862, progress was being made in the middle of the war-torn United States. The United States Department of Agriculture was born under the direction of President Abraham Lincoln. The Homestead Act was also created, giving 160 acres of free land in the Great Plains to pioneers, in the promise that they would farm the land for at least five years. The Morrill Act was signed in 1862 as well, granting each state large tracts of land to establish and maintain agricultural colleges, known as Land Grant Colleges. In 1890, another Morrill Act was signed to create more Land Grant Colleges for African Americans.

In 1887, the Hatch Act supplied more land for agricultural experiment stations, an idea brought forth by two scientists, Samuel Johnson and Eugene Hilgard. Agricultural production had begun to decline after decades of farming. They modeled their state experiment station based on those found in Germany and encouraged other states to research soil health, nutrient depletion, and other practical solutions to agricultural problems.

By 1890, the labor force had dropped to 43% as farmers. Average farm acreage had also decreased to 136 acres. Labor had become more efficient; 100 bushels of corn and wheat took about 40 and 50 hours, respectively. Equipment used at this time included a 2-bottom gang plow, a disc, a peg-tooth harrow, and a 2-row planter. Agriculture research was actively being done to create new crop varieties and selectively breed livestock. Since farming was a minority of the work force, consumer demand became important. Consumers were calling for a way for the government to regulate food and its safety.

In 1911, Farm Bureau was created by John Barron as a way for farmers to learn how to improve their trade. 1914 was a fantastic year – the Smith-Lever Act signed into creation the Cooperative Extension Service, bringing research from the Land Grant Universities to the farmers. Come 1920, farmers made up 27% of the labor force, there were 6.4 million farms, and they averaged 148 acres apiece. At this time, agricultural exports made up \$1.94 billion per year and were 42% of all exports. Future Farmers of America, lovingly referred to as FFA, was started in 1928 in Kansas with a group of 18 high-school-age boys. The organization was formed to create an interest in farming again, during a time when boys were leaving the farm to work elsewhere.

In the 1930s, the Great Depression and droughts plagued the United States. The USDA put what few research dollars they had into drought research. The droughts led to the Dust Bowl, a period when topsoil was blown away from central states due to dry climate and bare soil.

World War II prompted new methods of food processing to preserve food to send to the troops overseas. Dried milk, instant potatoes, powdered eggs, and dehydrated soup vegetables entered the scene. Post WWII, advances in chemistry led to pesticide and nitrogen fertilizer creation. The year 1948 saw the first version of the modern Farm Bill, called the Agricultural Act of 1948.

In 1950, the number of farms shrunk to 5.3 million, averaging 216 acres. Farmers were now only 12% of the

labor force. Farming had become even more efficient, and each farmer supplied food and fiber for about 16 people. Fast forward to 1960, farmers were officially less than 10% of the workforce and each farmer supplied food and fiber to 26 people.

The post-war era led to an increased standard of living across the board. The mechanization of farming changed the field of agriculture. People began exodus from the country to the city because of increased farm efficiency; more people could be fed from 1 farm.

1954 marked the first time that more tractors than horses or mules were recorded on American farms, a huge milestone in production. In the 1960s, research was focused on increasing crop yields and treating animal diseases to provide more abundant and less expensive food. Another huge milestone in agriculture education happened in 1969 – girls were allowed to join the FFA.

The 1980's marked the start for commercial organic producers and specialty crop growers. Then, in the 1990s, farmers made up 2.6% of the labor force and the average farm size was 461 acres. Labor hours to produce 100 bushels of corn was 2.75 hours with a tractor, 5-bottom plow, 20-ft tandem disc, planter, 20-ft herbicide applicator, 12-ft self-propelled combine, and trucks. One farmer supplied food and fiber for 100 people. Genomic research was starting to occur and Dolly the sheep was born, the first cloned animal.

Fast forward to today. Farm management apps for our smartphones, virtual consulting services, and autonomous equipment are the tools of the modern farmer. I won't belabor the points of today's agriculture scene since we are living and breathing it, but to see where we came from is truly humbling. From almost 100 man hours to produce 100 bushels of corn on 2.5 acres, to being able to produce that amount of grain in half an acre is truly astonishing. I'm sure Mr. McCormick would love to go for a combine ride and be a part of the 1% feeding the other 99. Happy Fourth of July, America!

## ***Holey Havoc..Munched Magnolia Leaves***

By: [Erik Draper](#) & [Joe Boggs](#)

Source: <https://bygl.osu.edu/node/1993>

I enjoy sitting out on the deck just absorbing the sunshine, watching leaves flutter on my wife's favorite magnolia, *Magnolia X brooklynensis* 'Yellow Bird'. This deciduous tree has an upright, pyramidal form with beautiful three inches high, vase-shaped blooms with butter-yellow petals, which emerge in late spring. The large elliptical-shaped leaves are 4-8 inches long and 4-6 inches wide. Suddenly, I was struck by the thought... Hey, just a minute, I can see blue sky through the leaves! What the heck is going on here?



©Erik Draper, OSU Extension

Holes in the leaves of *Magnolia X brooklynensis* 'Yellow Bird' Yellow Poplar Weevil adults and damage their feeding creates



©Erik Draper, OSU Extension

Because it is a prized plant in the Drapescape, I tend to keep a watchful eye on its performance, so I meandered over to the Magnolia to see what was creating holey havoc with the leaves. I carefully noted the appearance, size and possible patterns of holes in the leaves and the overall damage. While some leaf holes were kidney bean-shaped, others appeared to be almost round. The holes are randomly scattered across



some leaves, yet other leaves are absolutely riddled with holes. There are no readily discernible, consistent patterns or site placements for the holes in the leaves. Some of the holes were made earlier in the season as evidenced by the edges of the holes being completely healed over; while comparatively, other holes were freshly created because the leaf tissue still had open, raw wounds.

These holey magnolia leaves are the result of feeding by the **Yellow Poplar Weevil (YPW)**, *Odontopus calceatus*, also known as sassafras or magnolia weevils. Depending upon when adults feed on the leaf, the holes may be small, due to direct feeding damage in mature leaves; contrastingly, holes can be quite large, if adults fed on young, rapidly expanding leaves. These small, black to brownish, adult snout beetles will feed on and damage hosts such tulip poplar (yellow poplar), sassafras, and magnolia.

Joe Boggs reported an outbreak of YPW on tuliptrees in Southern Ohio in 2018 and Joe noted the following, “YPW have one generation per year; however, adults feed twice during the growing season. Adults spend the winter in protected sites such as the duff beneath trees. They emerge in the spring to feed, mate, and lay eggs in leaf midribs. This is the so-called “spring generation” of adults. The “summer generation” arises from the leafmining larvae. There are typically a greater number of adults in this generation compared to the spring generation meaning that most of the damage is done in early to mid-summer. Although yellow poplar weevils are finished feeding in central Ohio, the damage will remain evident throughout the season.”

It appears that we are seeing the “spring generation” in NE Ohio which feed on the leaves, mate, and then lay eggs in leaf midribs. I have other types of magnolias scattered in the Drapescape, like Sweetbay Magnolia (*Magnolia virginiana*) and ‘Ann’ ‘Betty’ and ‘Jane’ of the Little Girl Magnolias. Interestingly enough, none of these smaller leafed species of magnolias, at least right now, show any evidence of YPW feeding at all!! It is limited to the large leaf species that are being damaged by the YPW.

Incidentally, in that same article, Joe mentions another insect that he was surprised to see, that is also creating havoc on the ‘Yellow Bird’ magnolia leaves. The Magnolia Serpentine Leafmining Caterpillar (*Phyllocnistis magnoliella*) produces a unique “silvery snaking handiwork” of feeding trails swirling and crisscrossing the leaf. The larva of this moth is a leafmining caterpillar which feeds close to the upper epidermis of the leaf, resulting in the silver-like mines or feeding trails left on the leaf. Little is known about the life cycle of this moth and as with most leafminers, control is not practical because the insect is protected within the leaf.

If you notice these two insects them munching on your magnolia, don’t worry because no long-term damage is done by these insects feeding. Just kick back, relax and enjoy discovering intricate designs created by these insects sampling the leaves of your magnolia!

