

Southwest Michigan Field Crops Updates January 2024

Happy New Year! Here are updates from the MSU Extension Field Crops team in Southwest Michigan. If you have any items you would like us to include in future email updates—whether events you want others to know about or topics you would like to have addressed—please send an email or call the St. Joseph County Extension office.

New MSU Extension Field Crops Educator in Southwest Michigan

I am excited to announce that the search for my replacement was successful and we have a new field crops educator! Her name is Nicolle Ritchie (ritchi67@msu.edu) and she will be starting on January 8. She will be based out of the Centreville office but will cover most counties in the southwest. I will not officially transition out of my current role until May 1st, so I will be working alongside Nicolle to help her get started. If you have any ag-related questions in the next few months, feel free to contact me, Nicolle, or the St. Joseph County Extension office. I would also encourage you to attend one of the winter meetings we'll be hosting (see the calendar below) so you can get a chance to meet Nicolle.

Here is a brief bio from Nicolle to get the conversation started when you get a chance to meet her.

My family moved to Michigan when I was in kindergarten, so most of my growing up was done in Three Rivers. I spent at least a couple weeks each summer working on my grandparents' dairy farm in Idaho, which is largely where I developed a love for agriculture. I studied Plant Science at Utah State University, and my background is mostly in Integrated Pest Management and especially crop scouting. I am passionate about managing resistance, improving soil health, and incorporating sustainable practices. I have worked with primarily potatoes but also corn, soy, and cucumbers in southwest Michigan and almonds and pistachios in California.



Fun facts about me:

- I play the French horn in a local symphony and played in college, including in the Aggie Marching Band at USU.
- I was a missionary in Argentina shortly after graduating high school. I learned Spanish there and love the opportunity to use it whenever I can.
- My husband and I live in Sturgis with our two cats.

Glyphosate's Declining Weed Control Over 25 Years

I came across an article co-authored by one of my graduate study advisors at the University of Illinois—turns out our own Erin Burns and Christy Sprague are also co-authors—looking at the declining efficacy of glyphosate since the inception of Roundup-Ready crops in the 1990's. Below is an excerpt from a [University of Illinois press release](#), but you can also read the [entire PNAS Nexus article here](#).

It has been a quarter century since corn and soybeans were engineered to withstand the withering mists of the herbicide glyphosate. Initially heralded as a “silver bullet” for weed control, the modified crops and their herbicide companion were

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quickly and widely adopted across corn and soybean-growing regions of North America. In the years that followed, though, weeds targeted for eradication quietly fomented a rebellion.

“Our analysis represents one of the largest cumulative measures of how weed communities have adapted to the simplified weed management tactics adopted at an unprecedented scale throughout North America,” said Chris Landau, postdoctoral researcher for USDA-ARS and first author on the paper.

Although glyphosate provided superior weed control in the early years, most of the weeds in the dataset showed signs of adaptation to the chemical in just two to three years. Within a decade, weeds were up to 31.6% less responsive to glyphosate, with further linear declines as time went on. “Nature did exactly what we were trying to help people avoid: it adapted,” said co-author Aaron Hager, professor and faculty Extension specialist in the Department of Crop Sciences and Illinois Extension.

In addition to loss of control, glyphosate efficacy became more variable over time.

“When glyphosate-tolerant crops were first adopted, weed control was high in every environment; however, year after year glyphosate performance became less consistent,” said co-author Marty Williams, an ecologist with the USDA-ARS and affiliate professor of crop sciences. “For example, glyphosate provided nearly 100% control of a given species in most plots in the mid-1990s. But over time, acceptable weed control became rarer, often deteriorating below 50%, 30%, and worse.”

In cooperation with 24 institutions throughout North America, Landau compiled a massive database representing nearly 8 million observations from 1996 to 2021. Landau winnowed the data down to fields that tested glyphosate annually, alone or in combination with a pre-emergence herbicide. He also narrowed the target weeds to seven major players: annual and giant ragweed, horseweed, lambsquarter, Palmer amaranth, velvetleaf, and waterhemp. In the end, the dataset represented trial data from 11 institutions.

After documenting patterns of glyphosate control and variability over time, Landau re-ran the analysis for plots in which a pre-emergence herbicide had been applied before glyphosate. The results were strikingly different.

“Adding a pre-emergence herbicide effective against the target weed species significantly improved control and reduced variability of glyphosate over time,” Landau said. “The most we saw for any weed species was a 4.4% loss of control per decade, compared to 31.6% loss for glyphosate alone.”

Hager isn’t surprised. Along with several U. of I. colleagues, he has been cautioning against reliance on any single chemistry for 15 years. His 2008 recommendation aimed at avoiding glyphosate resistance included guidance to use a pre-emergence herbicide at the full rate. Far from common practice at the time, the recommendation was largely ignored.

“Having already seen loss of control with ALS- and PPO-inhibitors [other classes of herbicides], we eventually reached the point where we felt it necessary to come out with some very specific recommendations for glyphosate. Because if we didn’t, we had a pretty good idea of where this was going to end up,” Hager said. “And, unfortunately, we were right.”

Regardless of the mechanism, the pattern is clear: silver bullets for weed control don’t exist. The researchers urge diversification in chemistries, including soil- and foliar-applied products; crop rotation patterns; and mechanical controls.

And if another silver bullet is marketed in the future? Hager says the glyphosate story should serve as a cautionary tale. “Let’s imagine a company says they have the next silver bullet. It’s going to enjoy a huge market share almost instantaneously. But it needs to come with a stewardship plan to better preserve that chemistry over time,” he said. “Why would we think nature would behave any differently? It won’t.”

New MDARD Central Licensing Unit Contact Information

The Michigan Department of Agriculture and Rural Development (MDARD) Central Licensing Unit (CLU) processes pesticide applicator credentials. To improve customer service response times, MDARD’s CLU created a central email address. To contact the Central Licensing Unit about certification credentials.

Email: MDARD-PestCert@michigan.gov

Phone: 800-292-3939

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Additional information about pesticide certification can be found on MDARD's certification website at www.michigan.gov/mdardpestcert.

MSU Extension Drainage Workshop 2024

Michigan's 2024 Drainage Workshop will be held in East Lansing (524 S. Shaw Lane) on Feb. 27-29. This workshop is a collaboration between Michigan State University and Michigan Land Improvements Contractors of America. Here are four reasons to attend:

1. We offer a modern and straightforward approach to drainage design with user-friendly online tools and hands-on exercises.
2. We offer training to make contour maps with the QGIS free user-friendly software, and exporting the contours to your GPS design and machine software.
3. We have a demonstration of drainage design software. Will Word will demonstrate Global Mapper software as an aid in drainage design. Nate Cooke will present design and AGPS machine-control software.
4. We offer a live demonstration of properly connecting a lateral to a main pipe (see photos here).

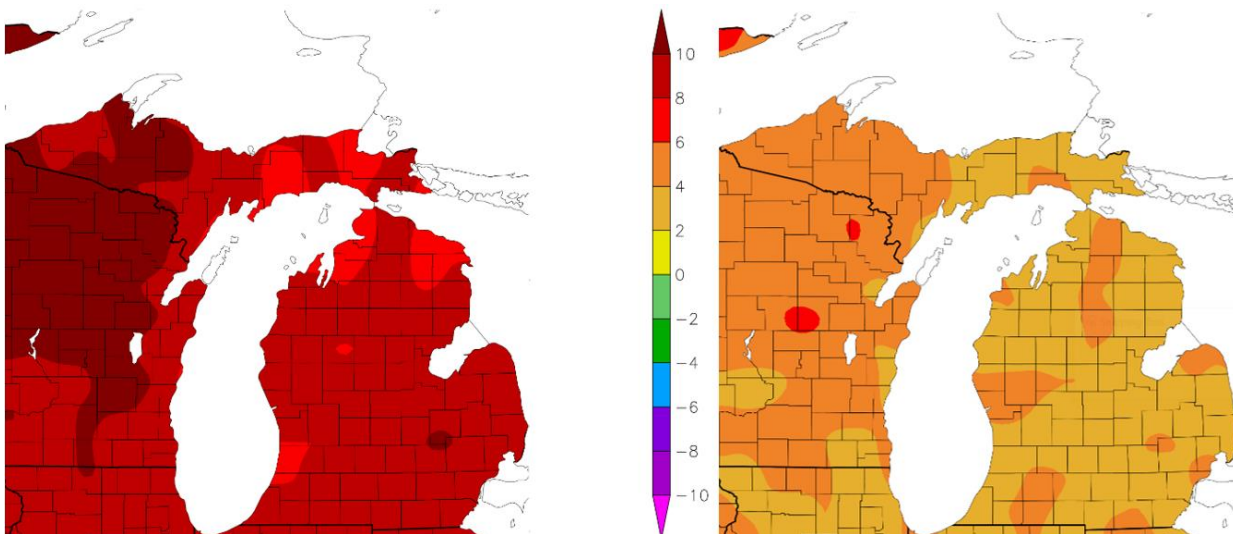
A continental breakfast as well as a lunch buffet (meat and vegetarian) will be included each day. Parking will be free in lot 39 on MSU campus. [Register online](#) early for a 30% discounted price of \$210 by 11:59 p.m. ET on Feb. 1, 2024. Normal registration price will be \$300 starting from Feb. 2, 2024. Registration deadline is 11:59 p.m. ET on Feb. 23, 2024. This workshop is limited to 20 participants, and on-site registration will be unavailable on the day of the event.



Weather Update

Weather

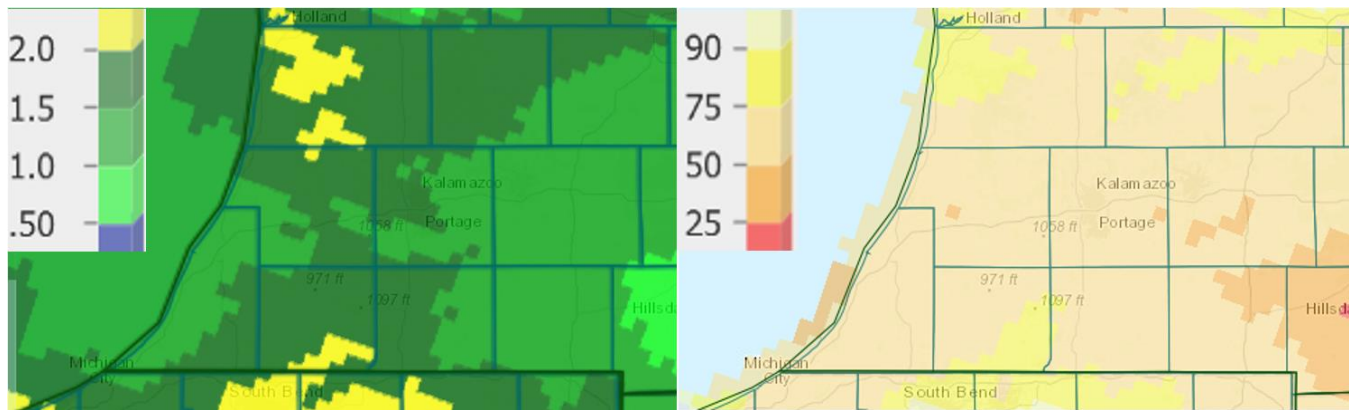
Temperatures so far this winter have been above normal, and December in particular was 8-10 degrees above normal for most of the state. I'm sure we will be hearing how 2023 set records for the warmest year globally as NOAA finishes their analyses later this month. The 6-10 day outlook predicts a continuation of above-normal temps, but the 8-14 day outlook predicts near-normal temperatures.



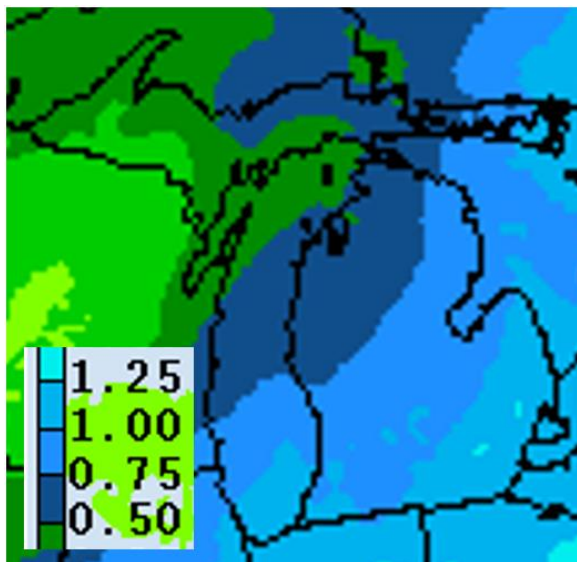
Temperature departure from normal for December (left), and the last 3 months (right) as of January 3.

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Precipitation in south-central and southwest Michigan this fall was a roller coaster ride: October = wet, November = dry, December = depended on location but 1.0-1.5x wetter than normal. The overall effect over the past three months was 1.0-1.3x wetter than normal across the region. The precipitation forecast for the coming week predicts 0.75-1.25 inches for southwest Michigan, most of that predicted next Tuesday into Wednesday with a slight chance of a small amount over the weekend. The 6-10 and 8-14 day outlooks both call for above-normal chances of precipitation.

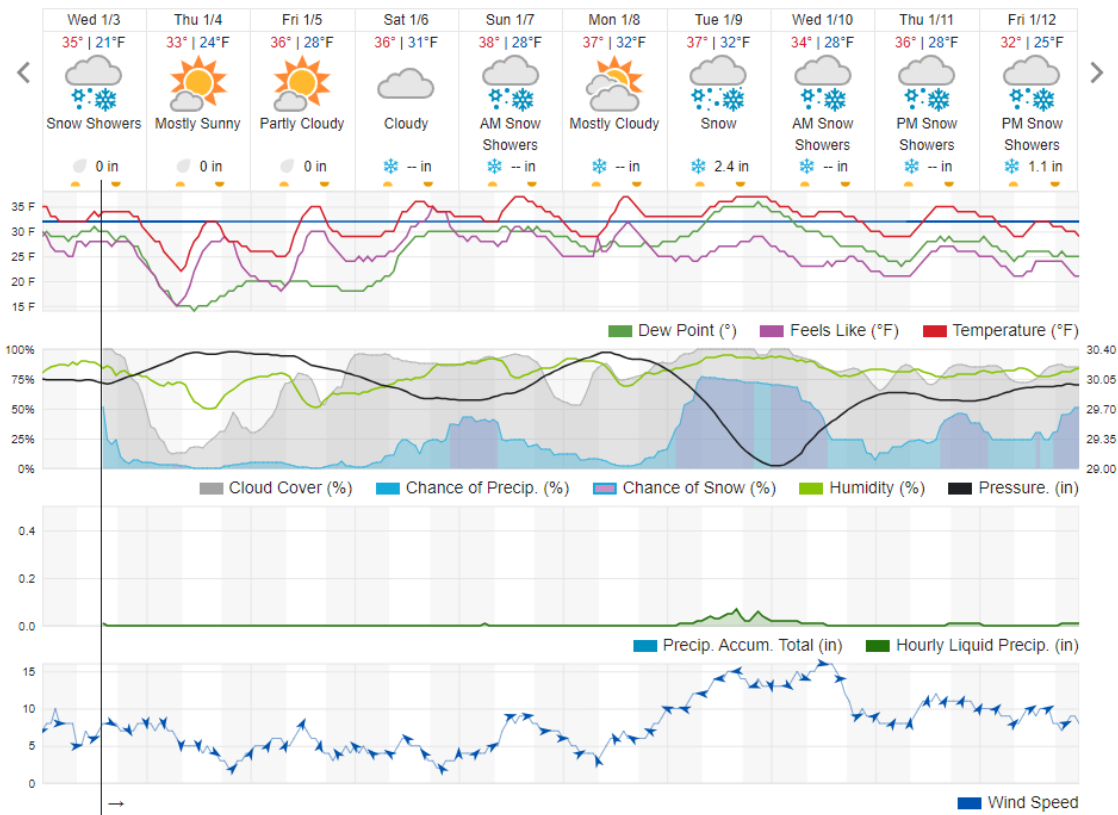


Precipitation totals (left) and percent of normal (right) for the past 30 days as of January 3.

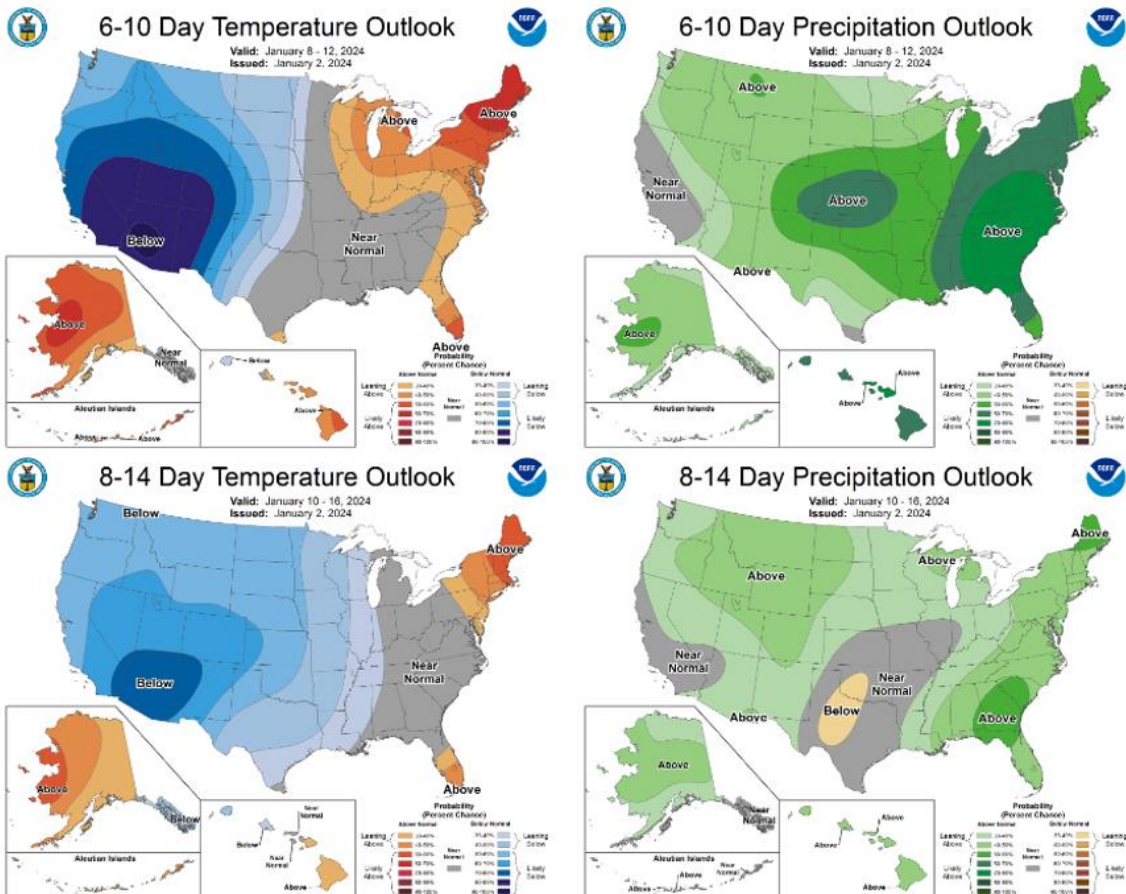


Precipitation forecast for January 4-11.

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Ten-day weather forecast for Kalamazoo according to wunderground.com.



The 6-10 day (January 8-12, top) and 8-14 day (January 10-16, bottom) outlooks for temperature (left) and precipitation (right).

Calendar

(Note: Titles are clickable links to online content when highlighted and underlined.)

- Jan 4, 2024** [MSU Extension Virtual Crop and Pest Management Update](#). 9am – 3pm. Zoom. Cost is \$40, includes 2024 MSU Field Crops Weed Guide. Register online by Jan. 2.
- Jan 4-5** [Ohio Organic Grains Conference](#). Maumee Bay Lodge and Conference Center, 1750 State Park Rd. #2, Oregon, OH. Registration by Dec 1-\$100, by Dec 22-\$130 or after Dec 22 / onsite registration - \$175, includes 2 days of programing, meals, materials and access to all exhibitors-sponsors.
- Jan 5** [Purdue’s Top Farmer Conference](#). 8am-4pm. Beck Agricultural Center, 4550 US-52, West Lafayette OR online. Keynote Dr. Jim Bullard, former president and CEO of the Federal Reserve Bank of St. Louis, will discuss insights into Federal Reserve policy along with an examination of the key factors he expects to influence the U.S. economy in the years ahead. Cost is \$150 regardless of format, register online.
- Jan 9-10** [MABA Winter Conference](#). Lansing, MI.
- Jan 11** [Farm Policy and Risk Management Series – Late-Breaking News: Farm Bill Session](#). 6:30pm - 7:30pm. Zoom. Cost is free, register online.
- Jan 16** [Michigan Soybean On-farm Research Program Update](#). 9am – 1pm. GreenMark Equipment, Three Rivers, MI. Lunch provided by the Michigan Soybean Committee. 1 RUP available. Cost is free, register online to reserve your seat.
- Jan 16** [Farm Policy and Risk Management Series – Field Crops Session](#). 6:30pm - 7:30pm. Zoom. Cost is free, register online.
- Jan 23** [Farm Policy and Risk Management Series – Farm Bill Session #1](#). 6:30pm - 7:30pm. Zoom. Cost is free, register online.
- Jan 24-25** [Great Lakes Crop Summit](#). Mt Pleasant, MI. Registration before Jan 8 - \$175 after Jan 8th - \$200.
- Jan 29** [MSU Extension SW Crop and Pest Management Update](#). 8:30am – 3:00 pm. Dowagiac Conservation Club, 54551 M-51 North, Dowagiac, MI. Cost is \$40, includes light breakfast, lunch, 2024 MSU Field Crops Weed Guide. Register online by Jan. 21.
- Feb 5** [MSU Extension SE Crop and Pest Management Update](#). 8:30am – 3:00 pm. Old Mill Museum, 242 Toledo St., Dundee. Cost is \$40, includes light breakfast, lunch, 2024 MSU Field Crops Weed Guide. Register online by Jan. 26.
- Feb 7-8** [6th Annual Underground Innovations](#). Bavarian Inn Lodge, Frankenmuth, MI. Innovative farmers will share info on cover crops, strip-till, relay cropping, food grade grains, intercropping, new crops, precision technology, and new crop markets. Early bird registration (\$150) ends December 31, regular pricing (\$175) ends on January 26.
- Feb 13** [Farm Policy and Risk Management Series – Farm Bill Session #2](#). 6:30pm - 7:30pm. Zoom. Cost is free, register online.
- Feb 19** [Branch County Farmers Day Field Crops Track](#). 8am-12pm. Branch Area Career Center, Coldwater, MI. Sessions to include irrigation practices, marketing vole management, conservation practices for less risk and more profit, and weed escapes in soybean. Cost is free, register online. **3 RUP, 3 CCA**
- Feb 19** [In-Person Core Pesticide Review and Core Testing](#). 8:00am. Branch Area Career Center, Coldwater, MI. Cost is \$15 for morning training payable to MSU, cost for testing dependent on license type. Morning training session is required before afternoon testing, only core and standards exams (no commercial categories) offered. Other locations and dates available. Register online.

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- Feb 19-3/1** [MI Ag Ideas to Grow With Virtual Conference](#). Field Crops track on Feb 22. Cost is free, register online.
- Feb 26** [Michiana Irrigated Corn and Soybean Conference](#). Blue Gate Restaurant, 105 E Middlebury St, Shipshewana, IN. Cost \$20 for early registration. Register online.
- Feb 27** [Soil Fertility & Nutrient Management Short Course](#). 8:30am-3:00pm. Allegan County MSU Extension office, 3255 122nd Ave., Ste. 200 Human Services Building, Allegan. Cost is \$50, register online.
- Feb 27-29** [2024 Drainage Workshop](#). East Lansing. Sponsored by MSU Extension in partnership with Michigan Land Improvement Contractors of America. Learn from university specialists and drainage industry professionals. Cost is \$210 by Feb. 1 or \$300 by Feb. 23. Register online, no onsite registration available.
- Apr 10** [In-Person Core Pesticide Review and Core Testing](#). 8:00am. GreenMark Equipment, Three Rivers, MI. Cost is \$15 for morning training payable to MSU, cost for testing dependent on license type. Morning training session is required before afternoon testing, only core and standards exams (no commercial categories) offered. Other locations and dates available. Register online.

MSU Extension Digest Briefs

[2024 MICHIGAN SOYBEAN ON-FARM RESEARCH UPDATES OPEN FOR REGISTRATION](#)

PUBLISHED ON NOVEMBER 30, 2023

Results from 52 on-farm research trials and practical information for managing deer damage will be presented at six educational programs conducted around the state.

[SARE VIDEO SERIES HIGHLIGHTS FARMER-LED SUSTAINABLE AGRICULTURE PROJECTS](#)

PUBLISHED ON DECEMBER 21, 2023

Check out all 18 North Central Region Sustainable Agriculture Research and Education Farming Matters videos.

[MICHIGAN SOYBEAN ON-FARM RESEARCH REPORT 2023](#)

PUBLISHED ON DECEMBER 21, 2023

Soybean producers and agribusiness representatives can download the results from 12 different on-farm research projects conducted by MSU Extension and the Michigan Soybean Checkoff.

[THE 2023 MICHIGAN SOYBEAN ON-FARM RESEARCH REPORT IS AVAILABLE](#)

PUBLISHED ON DECEMBER 21, 2023

Soybean producers and agribusiness representatives can download the results from 12 different on-farm research projects conducted by MSU Extension and the Michigan Soybean Checkoff.

[GREAT LAKES YIELD ENHANCEMENT NETWORK REGISTRATION IS OPEN — ACT NOW TO BE INCLUDED IN THE 2024 PROGRAM](#)

PUBLISHED ON DECEMBER 20, 2023

Would you like to capture as much yield as possible on your wheat fields? Join us as we figure out how to make it happen!

[FARM POLICY AND RISK MANAGEMENT SERIES: FIELD CROPS SESSION](#)

PUBLISHED ON DECEMBER 13, 2023

MSU Extension will host the next farm policy and risk management webinar focused on field crops with industry professionals on Tuesday, Jan. 16 at 6:30 p.m.

[PREPARING FOR 2024 WITH PASSAGE OF THE 2018 FARM BILL EXTENSION](#)

PUBLISHED ON DECEMBER 12, 2023

MSU Extension has resources to help you make your Farm Bill commodity program decisions.

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EXTENSION AGRICULTURE & AGRIBUSINESS IN MICHIGAN PUBLISHED ON DECEMBER 11, 2023

Michigan State University Extension educators work with farms of all sizes to positively impact individual farming operations. When individual operations do well, their success helps to fuel state and local economies.

Eric Anderson

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