

Southwest Michigan Field Crops Updates May 2023

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

MAJOR CHANGE for MSU Extension Field Crops in Southwest Michigan

Those who have had the privilege of working with MSU Extension soybean educator Mike Staton over the past decade know what an asset he has been to Extension and soybean growers throughout the state. He has been an Extension educator since 1989 in various roles and locations. But, as people are wont to do, Mike has announced that he will be retiring in spring 2024.

I will be taking his place and transitioning into the statewide soybean educator role over the coming year. For this growing season, I will continue the programming and outreach efforts that I have been doing over the last few years while learning the new role with Mike along with Mark Seamon of Michigan Soybean Committee. In January 2024 I will be almost entirely focused on the soybean program and will be leading the program by the time Mike retires. I will continue to be located down here, but we will be looking to hire my replacement in the Centreville office as the SW field crops educator. I look forward to working with all of you in the future in my new role. Feel free to reach out to me with any questions.

Soybean Plant Stands: Is Replanting Necessary

Although most soybean has not been planted yet, it is important to have a plan in place should resulting stands appear to be suboptimal. Researchers from 20 land grant universities, including MSU, have compiled a summary of factors affecting the decision to replant or repair a soybean stand. The fact sheet, "[Soybean Plant Stands: Is Replanting Necessary](#)," is funded by the United Soybean Board. The six pages cover a wide range of topics including timing of damage, location of damage on the plant, and specific types of injury, among others. Here are just a few questions from the bulletin with an abbreviated answer.



How low of a population can I have without having to repair/replant? It likely takes 70,000 to 75,000 healthy and uniformly distributed plants to reach 95% of the yield produced by full stands [in northern regions].

Do I fill in or start over? Although we use the term “replanting,” there are few instances when destroying the existing plants (“starting over”) in a damaged stand is beneficial. In practice, we almost always plant additional seed into existing stands. The planting process destroys some existing plants, but most of them remain alive and contribute to yield. “Repair-planted” soybeans may mature a little later, which may delay harvest but has no other negative effect.

Will the plant survive if the injury occurs below the cotyledon? A soybean plant will usually regrow when the main stem has been cut off above the cotyledonary node. One or more axillary buds may develop after a main stem has been cut. Plants cut off below the cotyledons will not recover.

Major takeaway #1:

Stand loss that leaves fewer than...75,000 plants per acre in the most northern growing regions, or stand loss patterns that leave areas of more than 6 to 10 square feet in size without any plants, should be considered for replant.

Major takeaway #2:

The decision to repair-plant should focus on profitability, not on an emotional response to beat-up stands and seedlings.

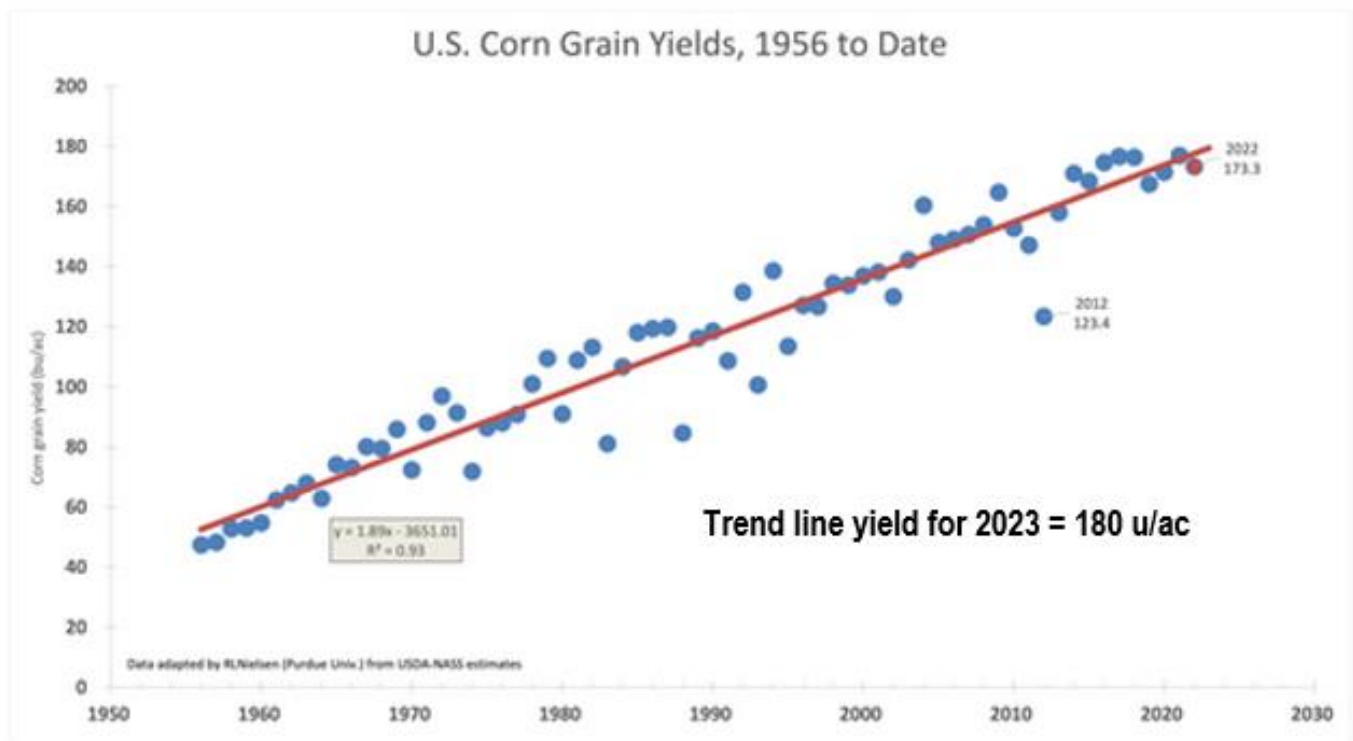
You can also check out these MSU Extension articles for more information: “[Thin soybean stands can produce surprisingly high yields](#)”, “[Assessing frost/freeze damage to emerged soybeans](#)”, and “[Making replant decisions for corn and soybeans](#).”

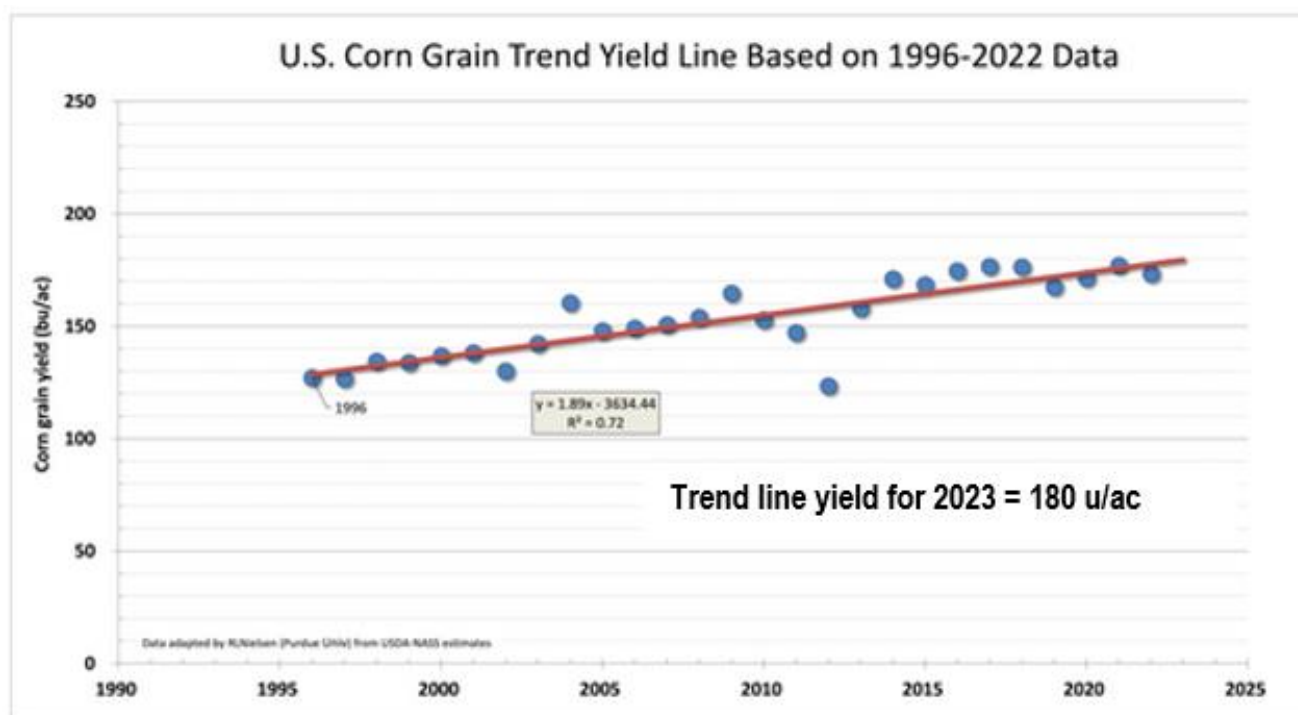
What Has Impacted Corn Grain Yields Over Time?

Most agriculture textbooks and other sources present the iconic graph of how corn yields have changed over the past 150 years—lots of little dots on an X-Y axis with linear lines drawn that try to account for patterns. There was a fairly flat line with open-pollinated production, a line with a steeper slope when double-cross hybrids were introduced, another line with a steeper slope with our current method of producing hybrids, and some graphs include yet another line when “biotech” corn was introduced in the mid-1990’s. Seed companies over the years have used such graphs to propose that 300+ bushel corn (as a U.S. average) will be possible by fill-in-the-date. But how have these predictions fared?

Purdue corn agronomist emeritus Bob Nielsen posted an article a couple of months ago, “[Historical Corn Grain Yields in the U.S.](#),” that addressed the need for caution when trying to extrapolate a relatively small dataset over a long period of time. He showed that the corn yield trend from 1956 to the present—1.9 bu/acre/year increase—is the same as that for only the last 27 years since the release of biotech corn. His conclusion? “...the transgenic traits currently available to corn growers in the U.S. have not had any measurable effect on the annual rate of corn yield improvement.”

That sounds very controversial, but as Bob says, “That’s my opinion and you are entitled to it.”





Grassland Conservation Reserve Program Signups

Agricultural producers and private landowners can begin applying for the Grassland Conservation Reserve Program (CRP) signup starting April 17 through May 26, 2023. Among CRP enrollment opportunities, Grassland CRP is unique as a working lands program, allowing producers and landowners to continue grazing and haying practices while protecting grasslands and promoting plant and animal biodiversity and conservation.

Protecting grasslands with CRP not only benefits participants with annual rental payments and cost share assistance, it also contributes positively to the economy of many regions, builds biodiversity, and provides important carbon sequestration benefits to deliver lasting climate outcomes.

Landowners and producers interested in Grassland CRP, or any other CRP enrollment option, should contact their local USDA Service Center to learn more or to apply for the program before their deadlines. Producers with expiring CRP acres can use the Transition Incentives Program (TIP), which incentivizes producers who sell or enter a long-term lease with a beginning, veteran, or socially disadvantaged farmer or rancher who plans to sustainably farm or ranch the land.

Considering an Asymbiotic N-fixing Biological Product?

For several years, interest in biologicals has been on the rise. Whether it's a microbial product meant to enhance nutrient uptake, or a foliar product with less well-defined plant health benefit claims, more companies have been touting their potential, and more farmers are curious as to whether the additional cost will actually provide a yield benefit. Researchers from 9 universities across the Midwest have been trialing several products specifically categorized as asymbiotic nitrogen-fixers. Their results have been published in a bulletin, "[Performance of Selected Commercially Available Asymbiotic N-fixing Products in the North Central Region](#)," which is available as a free downloadable file.

Stored Grain and Soil Fumigation Training in December

I know, who's thinking about December at this point. But I also know that it is difficult for those who hold stored grain or soil fumigation pesticide certification to get the RUP credits to recertify.

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This training will cover the basics of stored grain fumigation in the morning and soil fumigation in the afternoon. We are applying for 4 fumigation RUP credits. We have some excellent speakers both from MSU and industry to bring you the most up-to-date fumigation information and training. By completing this class, participants will earn enough recertification credits to renew their private or commercial applicator fumigation standard and be able to purchase and apply fumigants in Michigan.

The meeting will be held on December 11, 2023 from 9:00am to 3:30pm at the MSU Livestock Pavilion (4301 Farm Lane, East Lansing, MI). Cost is \$60.00/person, lunch included. [Register online.](#)

Introduction to Grain Marketing Videos Released

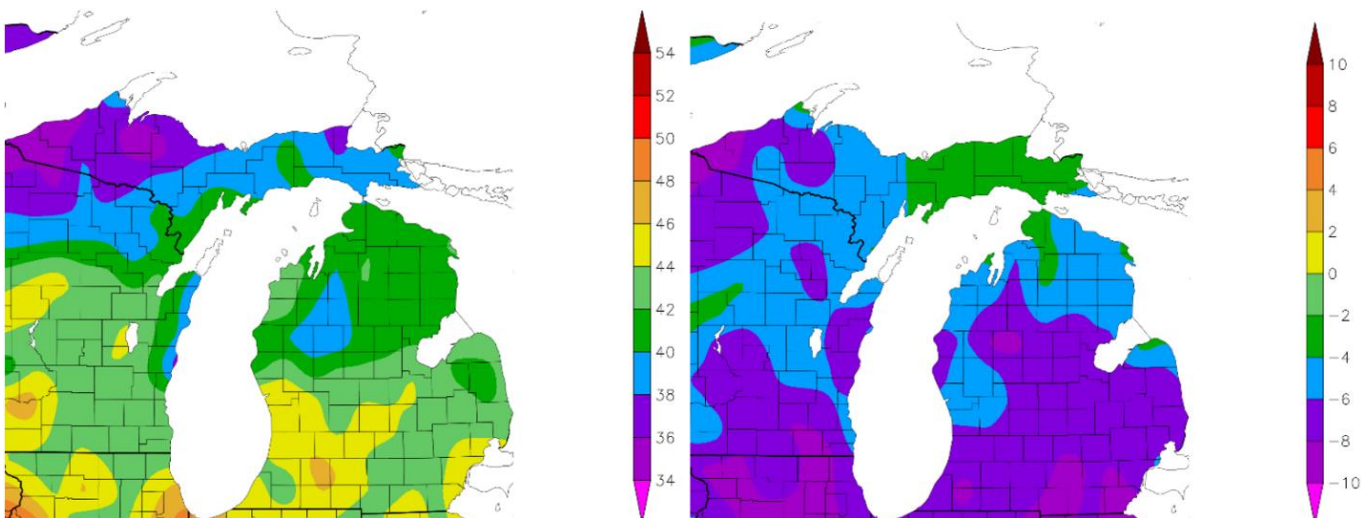
A few months ago, the MSU Extension Farm Business team launched the first phase of reorganizing their team's website. That reorganization includes a dedicated page to [Commodity Marketing](#). Now all their related existing resources are in a centralized location. Several of the resources you'll find there include articles, decision tools, and workshop recordings.

They have now added to those resources with a series of short videos dedicated to beginning farmers. [Introduction to Grain Marketing: A Video Series](#) is based on a bulletin of the same name published in 2021 through the Beginning Farmer DEMaND Series. The videos series webpage has an embedded playlist player that allows access to all videos from that page. Each video is 5 minutes or less (with 1 minor exception) and covers a different aspect of grain marketing. Additional resources are also provided, including links to Purdue's Crop Basis Tool and Commodity Challenge websites.

Weather and Crop Updates

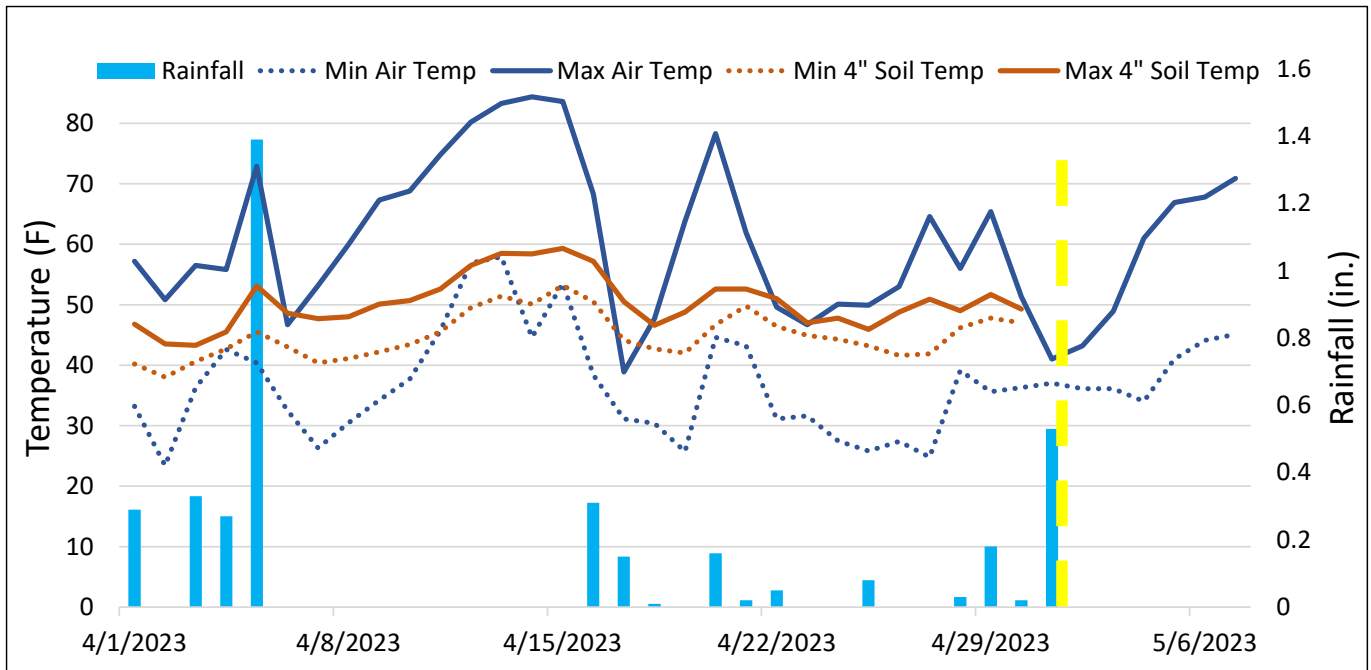
Weather

Temperatures during the last week of April were 2-6 degrees below normal on the roller coaster ride we're on this spring. As predicted, soil temperatures have dipped below 50 degrees F, but they should begin to rise toward the end of this week. Growing degree day (GDD) totals will be important to monitor moving forward, especially for those with seed in the ground already. We will have accumulated only 37 GDD (base 50 degrees for corn and soybean) by May 3 since temperatures began dropping on April 16 and only 15 since April 21. MSU climatologist Jeff Andresen says the upper-air Canadian troughing feature that brought the latest cold spell is reoccurring, giving rise to more cold weather the first part of this week. This will slowly give way to above-normal temperatures heading into the second week of May.

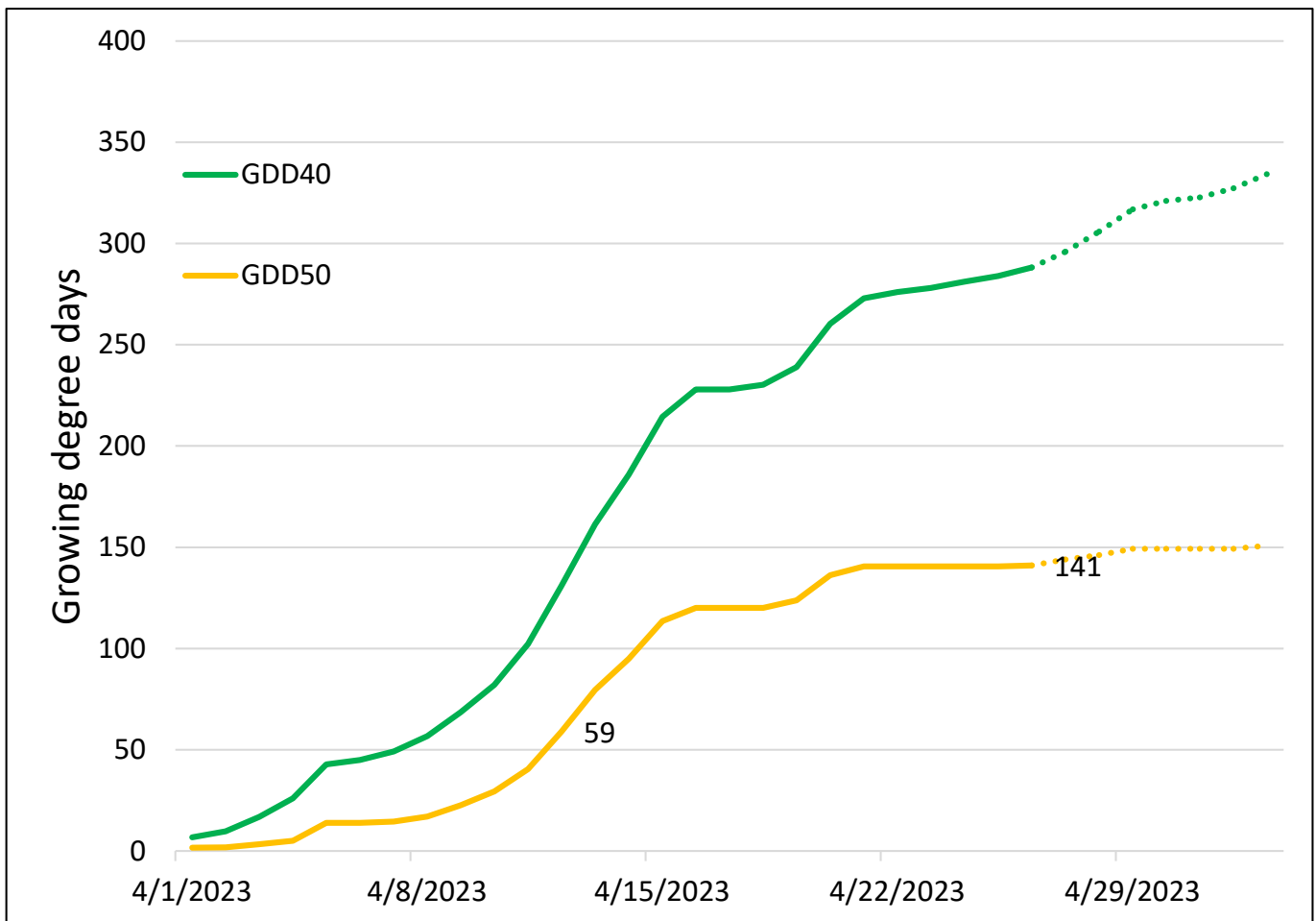


Temperature (left) and departure from normal (right) for the past 7 days as of May 1.

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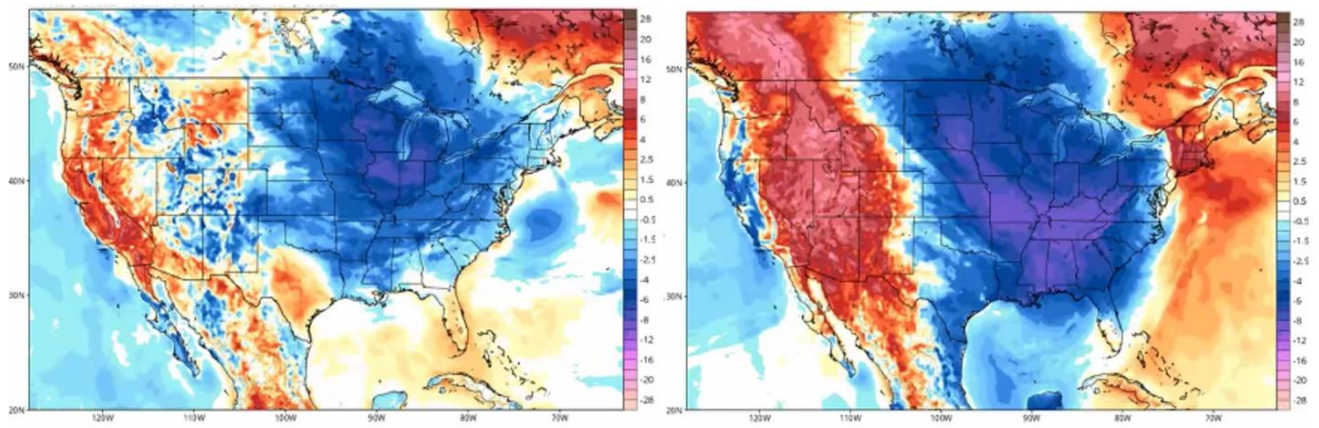


Air temperature, soil temperature and rainfall since April 1 as measured at the Kalamazoo Enviroweather station. Air temperatures shown after the dashed yellow line are based on the current forecast.



Growing degree day (GDD) accumulation base 40 degrees (green for forages, wheat) and base 50 degrees (yellow for corn, soybean) since April 1 as measured at the Kalamazoo Enviroweather station. Dashed lines indicate forecasted totals.

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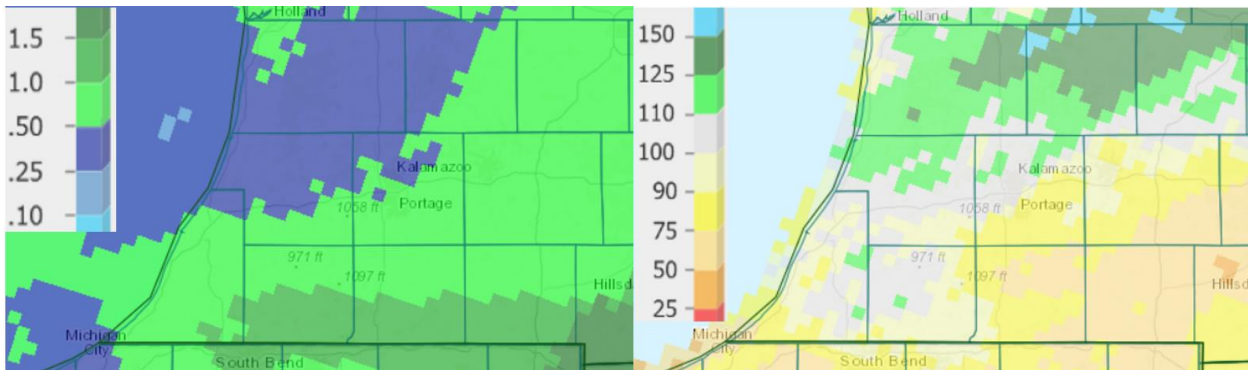


Surface temperature departures from normal in the U.S. for April 26 (left) and May 1 (right). Graphics courtesy of Jeff Andresen.

It wouldn't be late April in Michigan without a picturesque snowfall....Precipitation totals were near normal this past week with less rainfall along the Indiana border and as much as two times the normal amount closer to Grand Rapids. Similar rainfall totals are expected for the coming week with almost daily chances for rain from Friday through next Tuesday. The current 6-10 day and 8-14 day forecasts predict below-normal to normal chances of precipitation for the first half of May.

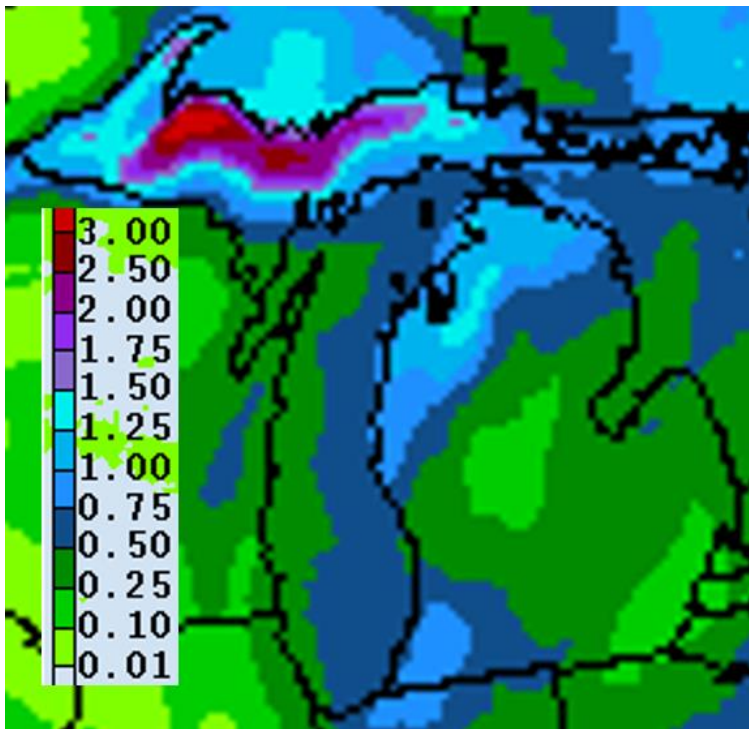


Snowfall on April 25...just another normal spring in Michigan. Photo courtesy of Eric Anderson.

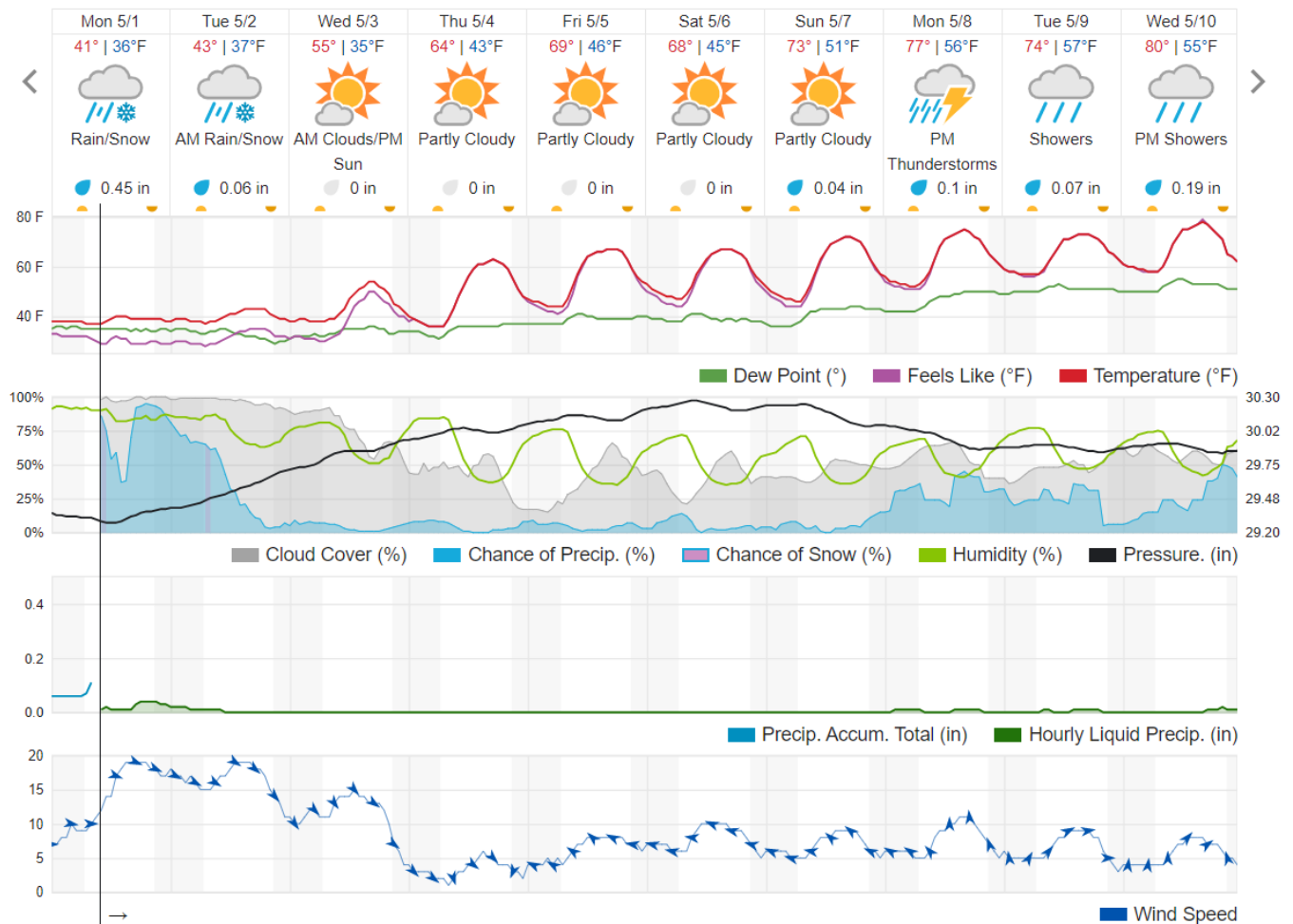


Rainfall totals for the past 7 days (left) and percent of normal for the last 30 days (right) as of May 1.

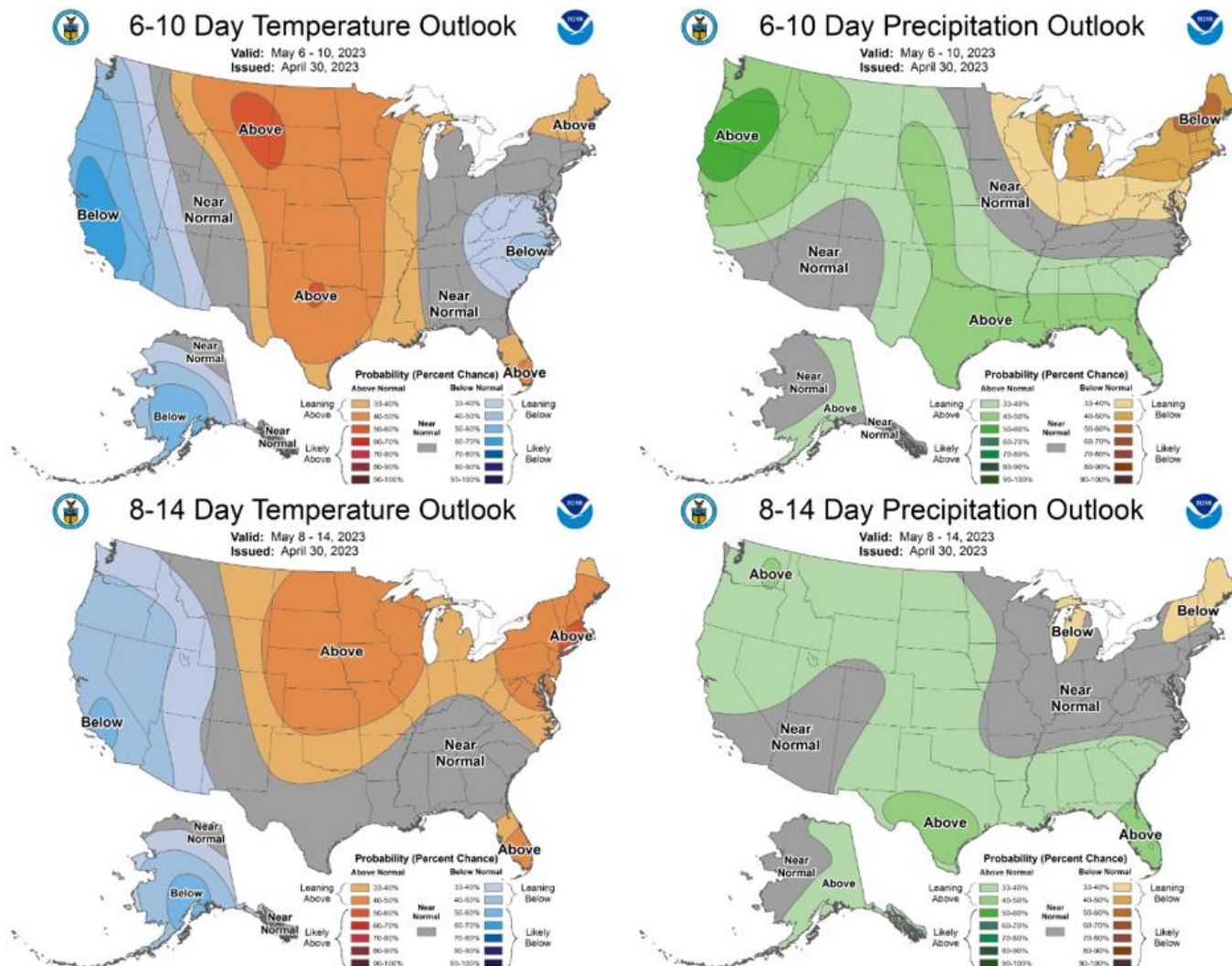
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Precipitation forecast for May 1-8.



The 10-day weather forecast for Kalamazoo according to wunderground.com.



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

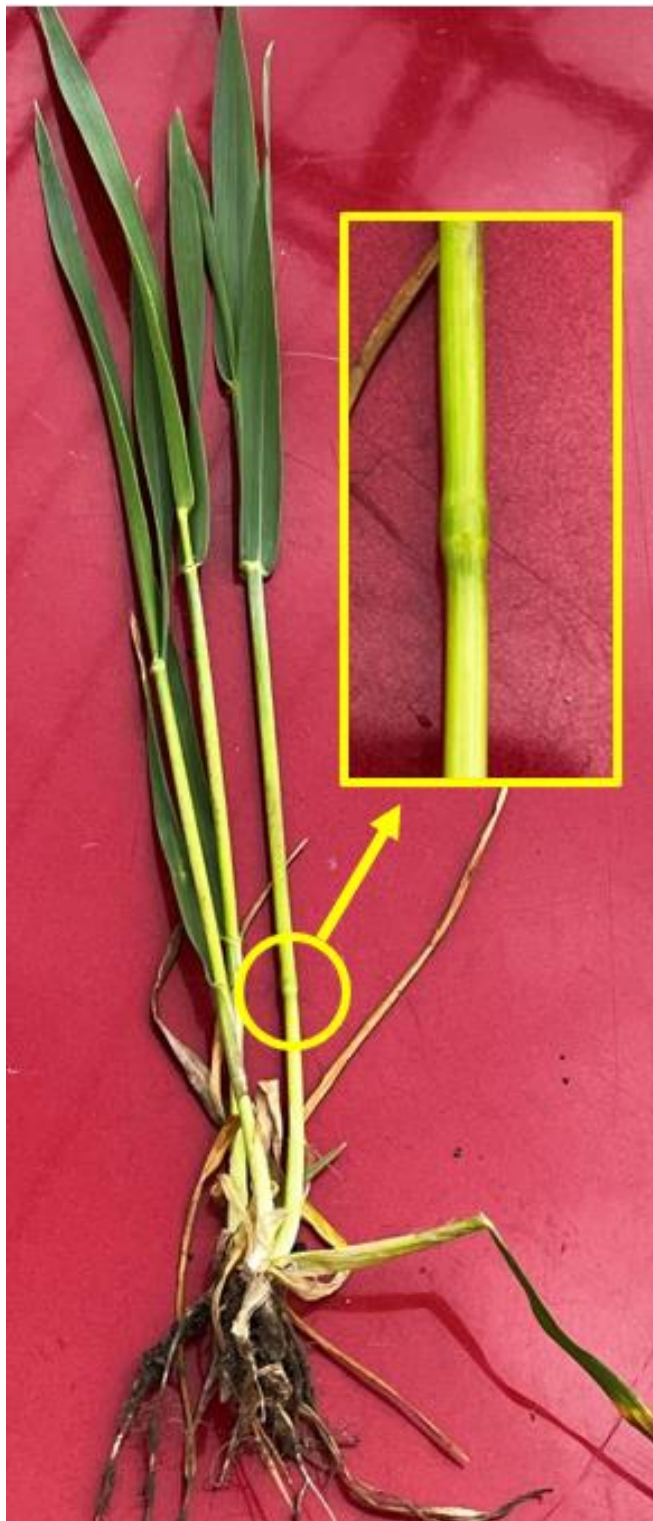
Crops and Pests

Corn and soybean planting progress is close to the 5-year average (7%) with 2% and 6% planted, respectively, as of April 30 according to the latest USDA Crop Report. These early-planted fields are not likely to emerge much before those that will be planted into warmer soils with the main advantage being spreading out the workload. Corn requires 100-120 GDD₅₀ to emerge after planting while soybean requires approximately 130 GDD₅₀. For soybean planted on April 12, for example, only 92 GDD₅₀ will have accumulated by May 3 according to current predictions, so we may not see emergence until at least the second week of May.

Winter wheat ratings in Michigan held steady according to the current Crop Report with 64% rated as good or excellent and an additional 30% rated as fair. Wheat has reached jointing (Feekes 6) in most fields in southwest Michigan, and some have reached Feekes 7 (two nodes visible). Jointing can be identified as the stage where the growing point has advanced above the soil level, and the first leaf node can be seen and felt on the lower stem. If weed control has not been accomplished yet, herbicide needs to be chosen carefully as some chemistries are no longer safe to apply without risk of crop injury. Refer to the [MSU Weed Control Guide](#) under the Small Grains section for herbicide efficacy and limitations. Keep in mind that temperatures should be 40-50 degrees or above for a few days after spraying for effective weed control. Given the current forecast, that window may be challenging to hit in the coming week.

This is a good time to identify abnormalities in nitrogen fertilizer application uniformity (see photos below). Problems with spreader/sprayer equipment can result in over-application in strips adjacent to areas of under-application. Corrections can be made at this stage, but care should be taken not to make the problem worse by

making a blanket application, particularly if the variety planted is susceptible to lodging with too much N applied. MSU Extension wheat specialist Dennis Pennington recommends checking with your seed dealer about the lodging potential of your varieties and working with your fertilizer applicator to determine what rate of N should be applied to deficient areas. Irrigators could make an application through the pivot later if deficiency symptoms persist, but again, this will result in any over-fertilized areas getting more N as well. MSU Extension soil fertility specialist Kurt Steinke says wait until the flag leaf has emerged if tissue sampling is conducted as the recommendations are based on sampling done at that growth stage.



Wheat at jointing (Feekes 6) in St. Joseph County. Photo courtesy of Eric Anderson.



Wheat having received insufficient (left) and sufficient (right) nitrogen fertilizer. There may be a slight delay in growth stage progression without sufficient plant nutrients. Photo courtesy of Eric Anderson.



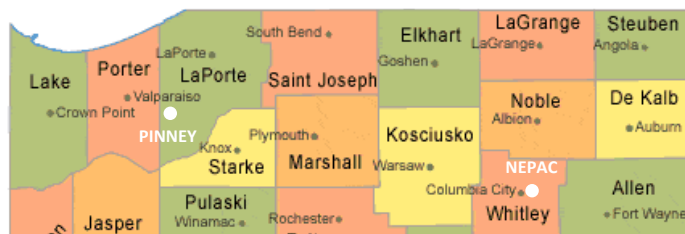
Uneven fertilizer applications in wheat fields. Aerial imagery courtesy of Eric Anderson.



Just for fun...killdeer often lay eggs in gravel nests at the edge of fields. Photo courtesy of Eric Anderson.

Insects. True armyworm (TAW) and black cutworm (BCW) trap counts in Indiana this past week (4/19/23-4/26/23) were similar to previous weeks but falling, and counts from southwest Michigan were relatively low across the board. Purdue crop entomologists John Obermeyer and Christian Krupke explain in a recent [Pest and Crop Newsletter article](#) that insect development in BCW and other species is weather dependent. “The temperature above which an insect grows and develops is called a developmental threshold. The minimum threshold for black cutworm has been established at 50°F. At temperatures lower than this (quite common during springtime in Indiana) they remain inactive until conditions become favorable. Though adults and larvae can freeze to death, short periods below freezing are not sufficient to kill them - freezing to death is not typically a large source of mortality at this time of year. At approximately 300 accumulated heat units (50°F base), black cutworm larvae are large enough to cut corn seedlings.”

BCW	Wk 1	Wk 2	Wk 3	Wk 4
Allen	0	1	0	
Allen	1	2	3	3
Allen	61*	50*	26*	43*
Elkhart	5	30*	8	8
Jasper	65*	3	4	0
Jasper	0	9	10	11
Kosciusko	13	24*	24*	8
Lake	151*	948	52*	16
Lake	5	16	19*	6
Lake	0	1	9	7
LaPorte	26*	27*	27*	6
Porter	16*	39*	27*	17
St. Joseph	0	25*		
Whitley	74*	76*	58*	11
Whitley	32*	15	5	13
TAW				
Pinney	60	296	216	54
NEPAC	0	259	179	13



Moth captures from Indiana for the week ending 4/26/23. Black cutworm trap counts marked with an asterisk were considered “significant” by Purdue staff.

		17-Apr	24-Apr	1-May
Armyworm	TAW 1	69	1	1
	TAW 2	1	11	11
	TAW 3	2	1	0
	TAW 4	0	13	1
Black cutworm	BCW 1	0	0	0
	BCW 2	0	0	0
	BCW 3	1	3	1
	BCW 4	2	0	0

Moth captures from traps set in southwest Michigan.

Calendar

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

- May 4** [Virtual Breakfast – Wheat Foliar and Head Scab Management with Kim Cassida](#) . 7-8am. Register online once for the entire series.
- May 11** [Virtual Breakfast – Soybeans and N Applications with Kurt Steinke](#) . 7-8am. Register online once for the entire series.
- May 18** [Virtual Breakfast – Dry Bean Planting with Scott Bales](#) . 7-8am. Register online once for the entire series.
- May 25** [Virtual Breakfast – Plant & Pest Diagnostics - Know Your Problems with Erin Hill](#) . 7-8am. Register online once for the entire series.
- Jun 28** **Weeds Day**. 8am-1pm. MSU Agronomy Farm, East Lansing. Hold the date, more details to follow.

MSU Extension Digest Briefs

PUBLISHED ON MAY 1, 2023

- [SOUTHWEST MICHIGAN FIELD CROPS UPDATE – APRIL 27, 2023](#) - Cold weather this past week has limited the options for effective cover crop and weed control and caused most farmers to reconsider early planting. Unfortunately, more cold weather and rainfall are predicted for the coming week.
- [MSU RESEARCHERS AWARDED \\$750K GRANT TO DEVELOP SUSTAINABLE MANAGEMENT FOR POTATO EARLY DIE COMPLEX](#) - The grant is provided by the U.S. Department of Agriculture's National Institute of Food and Agriculture.
- [EVALUATING FREEZE DAMAGE IN WHEAT](#) - How the recent cold temperatures may have affected your wheat.

PUBLISHED ON APRIL 27, 2023

- [INTRODUCTION TO GRAIN MARKETING: A VIDEO SERIES](#) - What is a “good” selling price when marketing grain? An Introduction to Grain Marketing: Video Series will aid you in understanding the fundamental principles involved in grain marketing.

PUBLISHED ON APRIL 21, 2023

- [MAKING IT IN MICHIGAN CONFERENCE AND TRADE SHOW RETURNED TO IN-PERSON FORMAT FOR 2023](#) - MSU Product Center hosted the 14th annual conference on April 20, 2023, at the Lansing Center.

PUBLISHED ON APRIL 20, 2023

- [MANAGING THE TOP FIVE TOUGHEST WEEDS IN MICHIGAN HAY FIELDS](#) - A survey of the Great Lakes Forage and Grazing Conference participants provides a list of tough weeds for producers.
- [POISON HEMLOCK IDENTIFICATION AND CONTROL](#) - Poison hemlock is a potentially dangerous weed found in Michigan, and identifying it is the first step in controlling it.

PUBLISHED ON APRIL 19, 2023

- [IRRIGATION SEASON: START WITH INSPECTIONS AND REPAIRS](#) - Running through a checklist of inspections and repairs for each irrigation system greatly improves the chance of being able to start irrigating the day the crop needs it.

PUBLISHED ON APRIL 18, 2023

- [WHAT SHOULD I DO IF I FIND A SWARM OF BEES?](#) - Contact a local beekeeper if you find a swarm of honey bees.

PUBLISHED ON APRIL 14, 2023

- [STILL TIME TO REPORT LARGE OR SIGNIFICANT WATER USE](#) - Agricultural water users in both Indiana and Michigan have until at least June 1 to report their water use for water sources with the capacity to pump 70 gallons per minute or greater.

PUBLISHED ON APRIL 13, 2023

- [WHICH MICHIGAN PESTICIDE APPLICATOR CERTIFICATION DO I NEED?](#) - Michigan pesticide applicator license requirements are typically straightforward in most agricultural settings, but it can be confusing to know which license is required under certain unique scenarios.
- [RECOMMENDATIONS FOR PLANTING LARGE SOYBEAN SEED](#) - Large soybean seed may create some challenges. Understanding the challenges and the strategies for overcoming them will improve seed performance.

PUBLISHED ON APRIL 11, 2023

- [THE OUTLOOK FOR MICHIGAN AGRICULTURE 2023](#) - This analysis outlines the outlook for agriculture with a particular emphasis on commodities of particular importance to Michigan.

PUBLISHED ON APRIL 6, 2023

- [NEW BULLETIN ON RENTING FARMLAND AVAILABLE FROM MSU EXTENSION](#) - Bulletin E-3427 offers guidance on navigating the land renting process.

PUBLISHED ON APRIL 4, 2023

- [SOIL TESTING RETURNS THROUGH MSU EXTENSION!](#) - MSU Extension launches new soil testing program for home gardeners and commercial growers.

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