

## Southwest Michigan Field Crops Updates May 1, 2021

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.

### Restriction of Use of 2,4-D or MCPA in Grape Growing Areas

This is the annual reminder for those living in grape growing areas in Berrien, Cass, Van Buren, Kalamazoo, and St. Joseph Counties that there exists a restriction on the use of specific synthetic plant auxins in these areas. If you would like a copy of this order, let me know and I will forward it to you. The order lists numerous townships and sections affected in this area. Here is a short section of the order for your consideration:

“It is ordered that pursuant to the authority granted the Director of Agriculture by Act No. 6 of the Public Acts of 1959, as amended, any and all persons shall cease and desist from the use of the volatile ester forms of 2,4-D and MCPA within the above described areas during the period of May 1 to October 1, 2021, and that the amine forms of 2,4-D and MCPA be applied at sprayer pressures not to exceed forty pounds and that sprayer booms be operated over crops at a height not greater than 25 inches.”

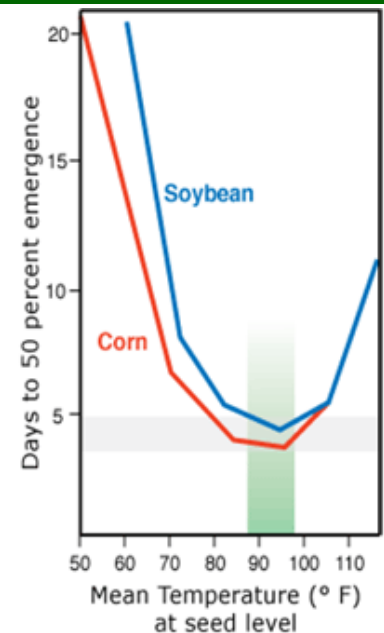
### Estimating Crop Emergence Using Soil Temperatures

For early-planted corn and soybean, we can estimate when to expect emergence based on soil temperatures. For corn, 90–120 growing degree days (GDD base 50) are required from planting to emergence [according to Iowa State’s Drs. Elwynn Taylor and Roger Elmore](#). Using base 50 just means we don’t expect much, if any, biological activity below 50°F so we ignore days where the average temperature is below that. According to their data, soybean requires soils that are 10 °F warmer compared with corn. If you know the soil temperatures in your fields, you can estimate emergence timing. You can also calculate GDD<sub>50</sub> for soils (or for air temps for that matter) with the following simple formula:

$$GDD_{50} = ((\text{Max soil temp} + \text{Min soil temp}) / 2) - 50$$

Note: GDD are typically calculated for air temps rather than soil temps, so care is needed when comparing with published GDD values.

As an example, soil temperatures along with calculated and accumulated GDD<sub>50</sub> for the Mendon Enviroweather station are shown in the table below for April 2021. According to these data, only 29 GDD<sub>50</sub> were accumulated during the first 28 days in April, which would mean that nothing planted in April should have emerged at this point. However, according to [Michigan Corn’s report on soil temperatures](#) in central Michigan on April 6, they recorded 4-inch soil temps at 60°F on average which would equate to 10 GDD<sub>50</sub> for that day. It is important to



Days to emergence for corn and soybean at different soil temperatures at seed depth. Image courtesy of Elwynn Taylor, Iowa State University.

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know the soil temperatures for your fields, so make sure to calibrate your data with whatever online database you plan to use [as I did in this study a few years ago](#).

Date	Max	Min	Ave	GDD <sub>50</sub>	Real GDD <sub>50</sub>	Cum. GDD <sub>50</sub>
4/1/2021	44.9	41.4	43.2	-6.85	0	<b>0</b>
4/2/2021	44.1	39	41.6	-8.45	0	<b>0</b>
4/3/2021	46	41	43.5	-6.5	0	<b>0</b>
4/4/2021	48.9	42.4	45.7	-4.35	0	<b>0</b>
4/5/2021	49.9	46.2	48.1	-1.95	0	<b>0</b>
4/6/2021	52.6	47.7	50.2	0.2	0.2	<b>0</b>
4/7/2021	54.3	50.1	52.2	2.2	2.2	<b>2</b>
4/8/2021	54.8	52.6	53.7	3.7	3.7	<b>6</b>
4/9/2021	54.3	51.9	53.1	3.1	3.1	<b>9</b>
4/10/2021	54.4	50.6	52.5	2.5	2.5	<b>12</b>
4/11/2021	54.2	52.3	53.3	3.3	3.3	<b>15</b>
4/12/2021	54.7	51.1	52.9	2.9	2.9	<b>18</b>
4/13/2021	54.1	49.7	51.9	1.9	1.9	<b>20</b>
4/14/2021	52.3	48.8	50.6	0.6	0.6	<b>20</b>
4/15/2021	50.5	48.1	49.3	-0.7	0	<b>20</b>
4/16/2021	51.5	47.3	49.4	-0.6	0	<b>20</b>
4/17/2021	51.6	46.7	49.2	-0.9	0	<b>20</b>
4/18/2021	51.4	46.7	49.1	-1.0	0	<b>20</b>
4/19/2021	50.5	48.5	49.5	-0.5	0	<b>20</b>
4/20/2021	49	46	47.5	-2.5	0	<b>20</b>
4/21/2021	46.8	44.3	45.6	-4.5	0	<b>20</b>
4/22/2021	47.3	43.3	45.3	-4.7	0	<b>20</b>
4/23/2021	49.7	44.5	47.1	-2.9	0	<b>20</b>
4/24/2021	49.3	47.2	48.3	-1.8	0	<b>20</b>
4/25/2021	51.2	47	49.1	-0.9	0	<b>20</b>
4/26/2021	52.1	47.4	49.8	-0.3	0	<b>20</b>
4/27/2021	55.4	49.8	52.6	2.6	2.6	<b>23</b>
4/28/2021	57.4	54.4	55.9	5.9	5.9	<b>29</b>

## Spring Turn-out Sets the Tone for the Entire Grazing Season

In the latest edition of the [Great Lakes Grazing Newsletter](#), Kable Thurlow and Kim Cassida discuss considerations for turning out livestock on pasture this spring. I will let you read it yourself if interested, but here are a few take-aways I found insightful.

- Rotational stocking systems are the most important tool producers have to manage forage growth and supply throughout the season.
- It is easy to find recommendations to delay grazing spring pastures until grass is 8 to 10 inches tall....waiting this long will almost certainly guarantee that grasses are in the exponential growth phase and most paddocks will be too mature by the time cattle get to them. A better strategy is to begin grazing before you think the paddocks are ready, perhaps when grass averages only 4 to 6 inches tall. At this stage of growth, cattle should be rotated rapidly through the paddocks (no longer than 24 hours per paddock,

perhaps as short as 8 to 12 hours), taking only the tops. As grass growth accelerates, this will help keep grass vegetative and stage regrowth over time for subsequent grazing cycles.

- Temporarily increasing stocking rate by adding extra cattle, such as stockers, to pastures can help utilize the extra growth expected in spring. If this is not practical for the operation, then plan to set aside some paddocks to accumulate forage once the cattle can no longer keep up. It is better to allow a few paddocks to get over-mature than to fall behind on all of them. The set-aside paddocks can be harvested as hay or baleage or used as a standing forage stockpile for summer grazing by animals with low nutritional needs.
- Nitrogen should not be applied to pastures before the first grazing in spring. Applying spring nitrogen is a strong driver of plant growth and simply pours gas on the problem of more forage than cattle can eat during the spring flush. Instead, apply split rates of 25 to 50 lb/acre N after the first, second, and third grazing cycles to help drive forage growth through the summer and even out the forage supply.
- Applying nitrogen to pastures with more than 30% legume content (clovers, alfalfa, and birdsfoot trefoil) is often not cost effective because the legumes provide enough nitrogen for the grass.

## Weather and Crop/Pest Update

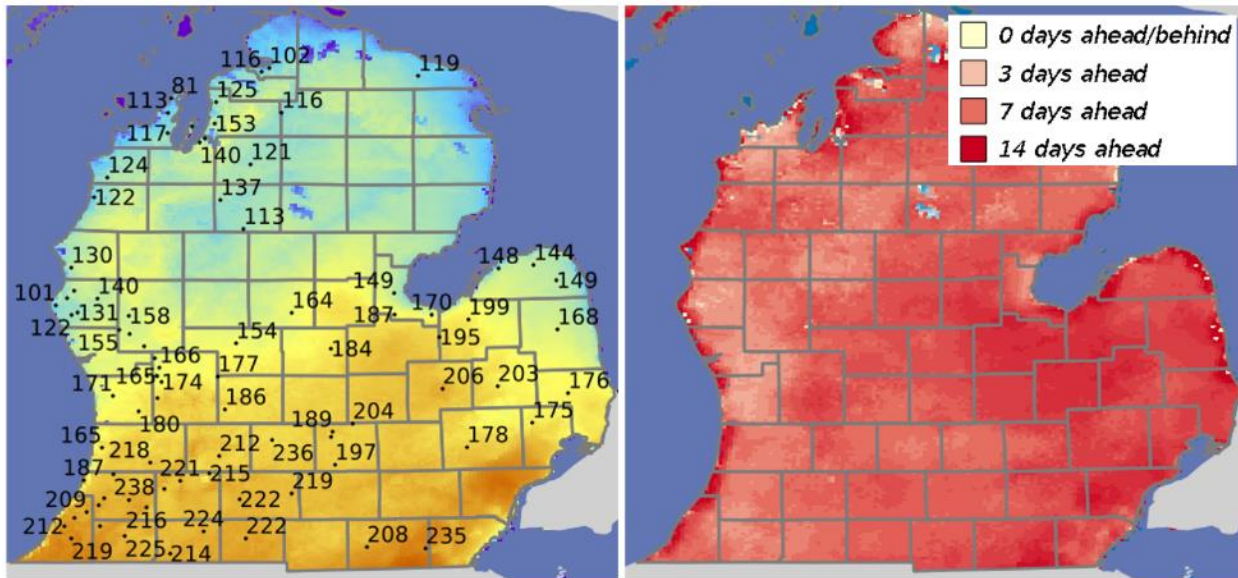
### Weather

What a difference a couple of weeks can make. Although we were off to an early start to the season with dry conditions and much-above-normal temperatures in late winter, the cooling trend during the last half of April has brought our heat units much closer to normal, although we are still roughly 7-10 days ahead. Soil temperatures did take a dip with many areas seeing average 2-inch depth temps go below 50°F, but they have rebounded with the warming trend this week. There is a chance of a light frost overnight Friday in low-lying areas as temps dip down to 35°F. Even with the cooler temps today and tomorrow, soils should remain above 50°F moving forward.

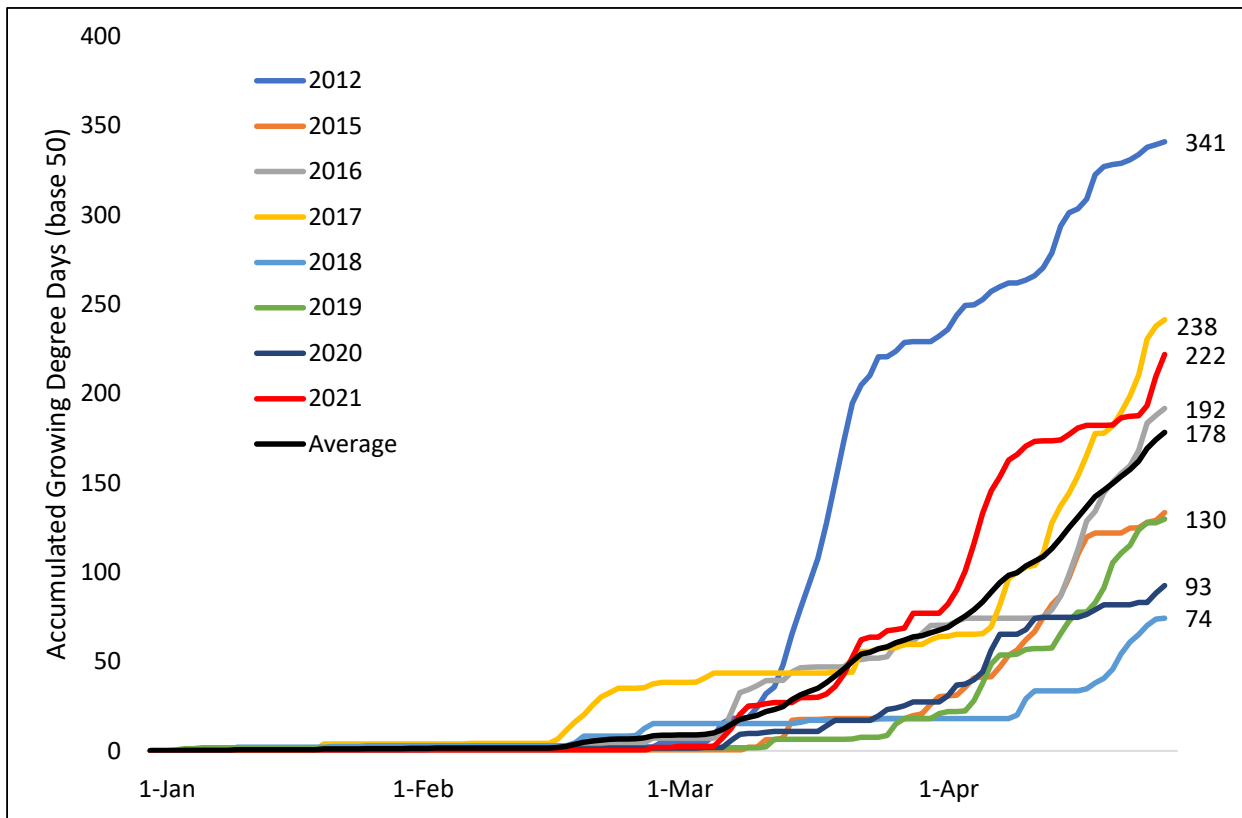
The southwest region has continued to fall further behind with regards to precipitation with most areas receiving between 5 and 50 percent of normal rainfall over the past two weeks. The situation for Michigan continues to deteriorate as nearly all of the Lower Peninsula and eastern Upper Peninsula are now classified as being under a moderate drought. As an example, precipitation received in Coldwater is currently 4 inches below normal, evidenced by dust clouds rolling behind tillage equipment and planters in the area earlier this week. MSU and Purdue Extension irrigation educator Lyndon Kelley has described the drought challenges [in a recent article](#) with the recommendation to monitor local water table levels as the spring progresses, particularly for those using irrigation.

We may see some improvement to the situation with the upcoming rainfall forecast. The next good chance of precipitation will come early next week with a tropical-origin weather system that should arrive on Monday and deliver as much as 1 inch over a two-day period. The medium-term outlooks have been adjusted recently with below-normal temperatures predicted for the first half of May - this is a 180° change from the prediction just a few days ago, so stay tuned for updates. I don't expect soil temps to fall below 50°F again though given the current predictions. All models are predicting wetter than normal conditions for that time period.

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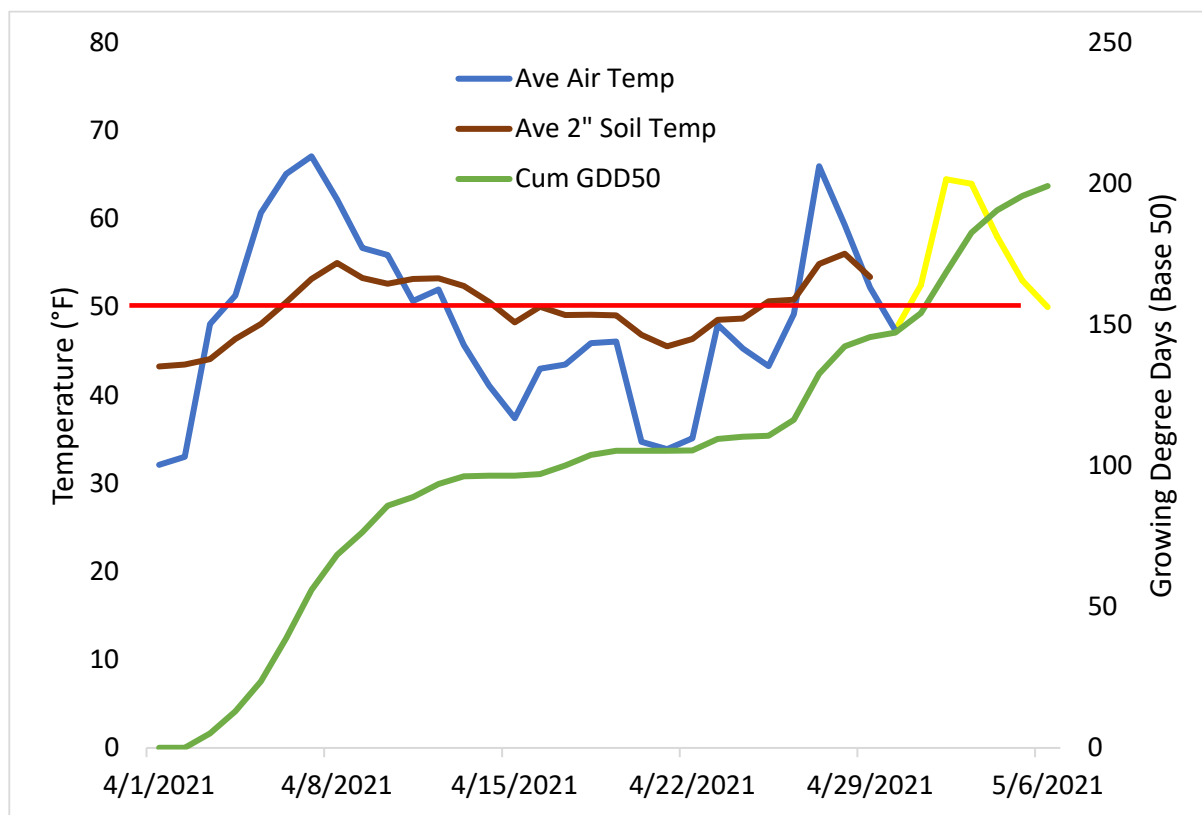


Growing degree day (base 50) accumulated (left) and comparison with normal (right) for March 1 through April 29, 2021.

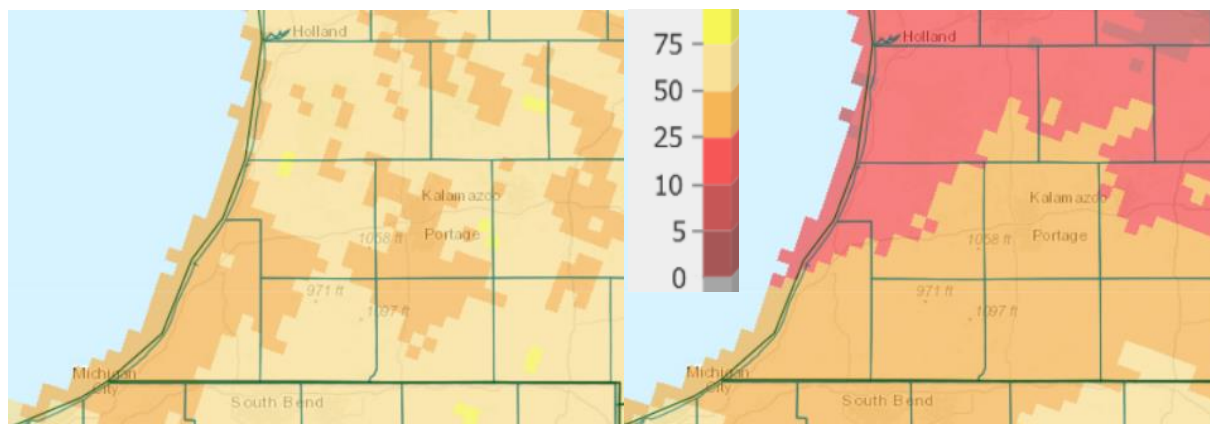


Accumulated growing degree days (base 50) for Kalamazoo, MI as of April 28, 2021 compared with the average and several recent years. Things have slowed down a bit in the last couple of weeks, but we are still 7-10 days ahead on heat units.

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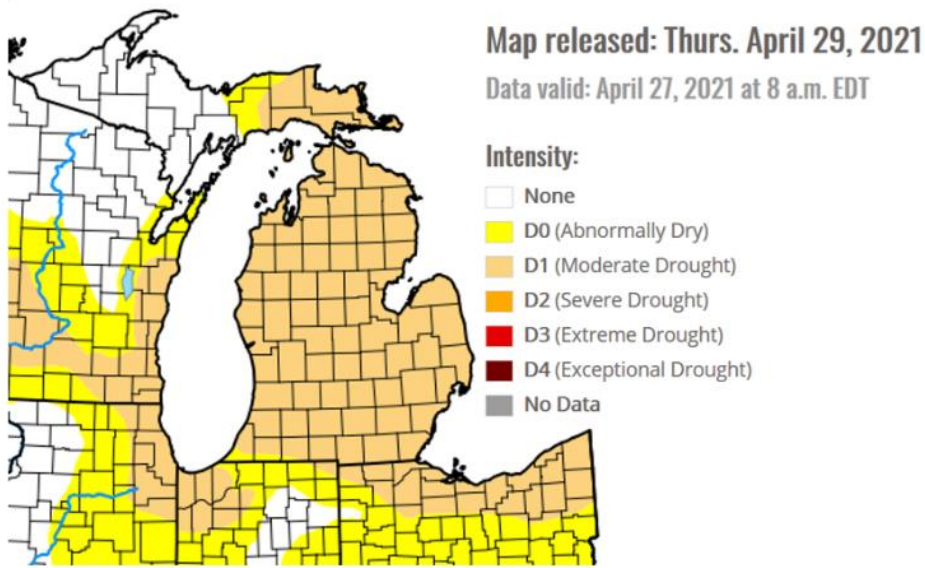


Average air and 2-inch soil temperatures and accumulated growing degree days (base 50) since April 1, 2021 as recorded at the Kalamazoo Enviroweather station. The yellow line indicates predicted air temperatures for the next week, and the red line highlights the standard minimum desirable soil temperature for planting.

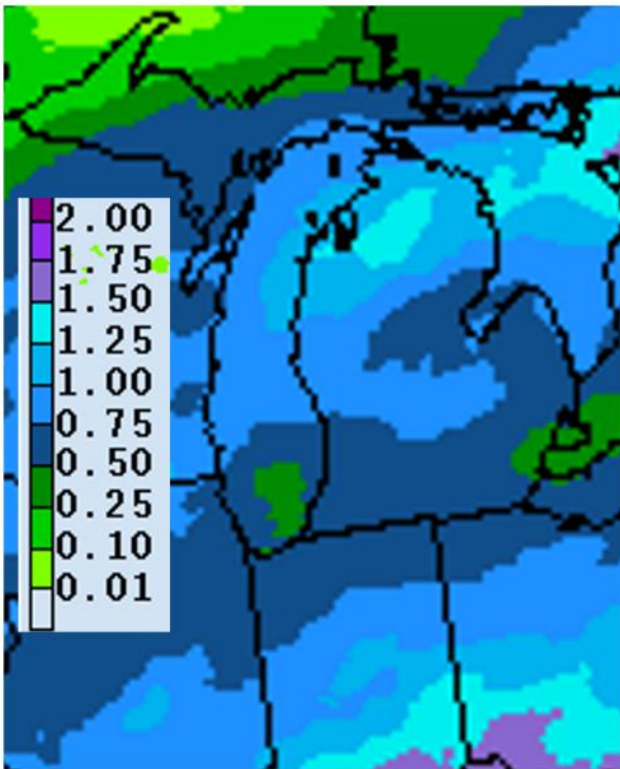


Precipitation percent of normal for the past 30 days (left) and the past 14 days (right). The map for the past 7 days is similar to that for the past 14 days only drier.

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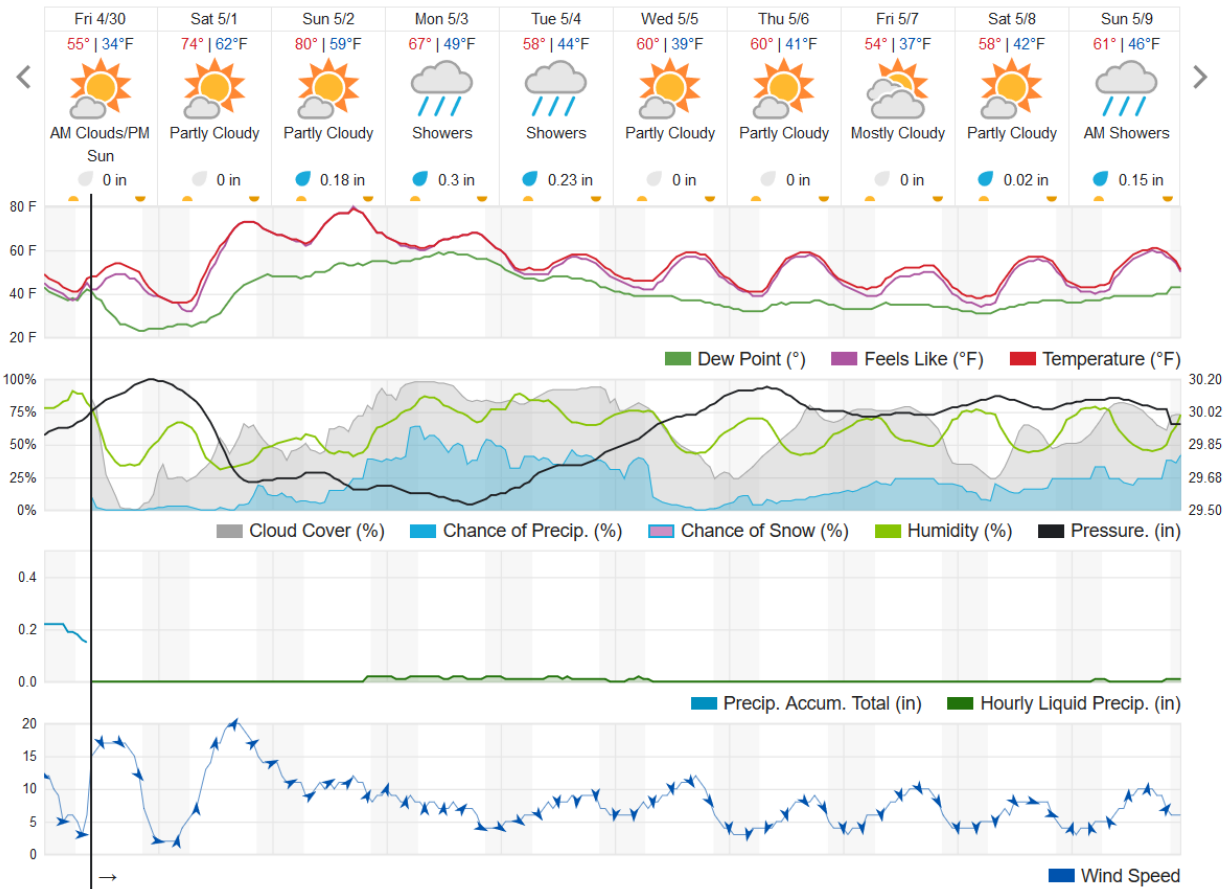


The U.S. Drought Monitor as of April 27, 2021.

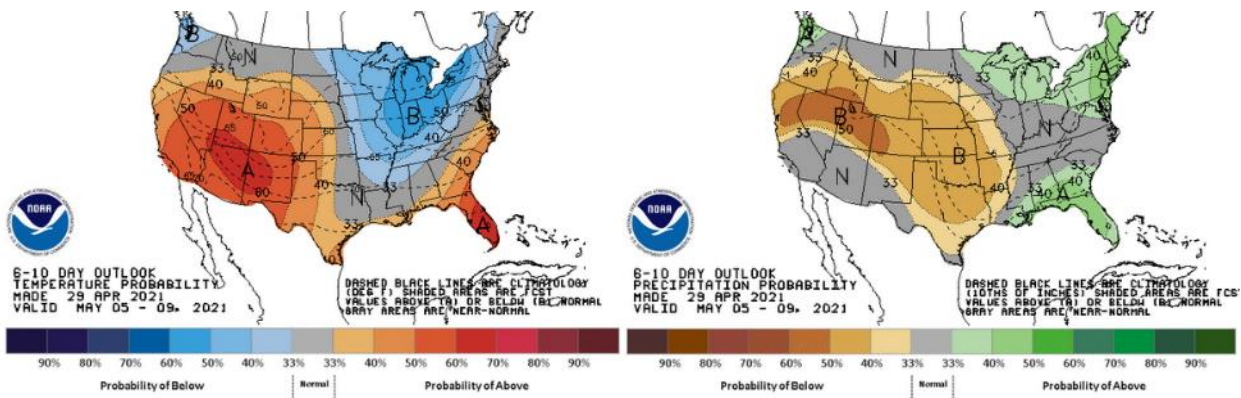


Precipitation forecast for April 30 through May 7. The majority of this is expected to fall Monday through Tuesday next week.

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The 10-day weather forecast for Kalamazoo according to wunderground.com. It will be challenging to find a time to spray between now and late next week, especially if we get the predicted rain.



The 6-10 day outlook (May 5-9) for temperature (left) and precipitation (right). The 8-14 day outlook is essentially the same. This forecast changed 180° in the last two days from warmer- to cooler-than-normal.

## Crops

Winter wheat and alfalfa appear to have come through last week’s freezing temperatures nearly unscathed. There was minor yellowing of leaf tips in both crops, but overall it appears we should be OK. Tillage equipment, sprayers and planters continue to make progress, although the state is only a few percent ahead of normal with regards to corn and soybean planting according to USDA’s recent Crop Progress report.



Minor freeze damage can be seen in alfalfa and wheat, but both crops should grow through this fairly quickly. Photo courtesy of Bruce MacKellar.

The wheat crop continues to look strong across Michigan with 71% rated good or excellent according to the latest Crop Report. Wheat has just started jointing (Feekes 6, indicated by the presence of the node “bump” near the base of the main stem) in our region. Why is that important? Jointing marks the last time for wheat when a late nitrogen application can be made with minimal risk of injury. There are also herbicides that cannot be safely applied once wheat has jointed, including dicamba and certain ALS-inhibitors (ex. Outrider, Olympus, PowerFlex, Rave, etc.). Other herbicides can be used until boot stage (ex. 2,4-D, MCPA, Starane Flex/NXT, Finesse, etc.) and others can be used through flag leaf (ex. Affinity BroadSpec/TankMix, Ally Extra SG, Harmony, Huskie, etc.). Check the label on herbicides you are considering for growth stage restrictions.

Fields with cover crops and winter annual weeds can still be found although an estimated 75 percent have been terminated. In the recent article, “[Cover crop termination timing to help manage soil moisture](#),” Lyndon Kelley estimated that as much as 2-3 inches of additional irrigation (or rainfall) would be needed to make up for water removed by a dense cover crop and subsequent tillage.

### **Pests**

According to MSU field crops entomologist Chris DiFonzo, alfalfa weevil monitoring should be underway soon based on accumulated heat units. This could be problematic as the pest may be progressing faster than the crop this year, resulting in a surge in the population well ahead of first cutting. Purdue entomologists Christian Krupke and John Obermeyer included an article and a scouting video on alfalfa weevil in their most recent [Pest and Crop newsletter](#). Purdue Extension forage specialists are recommending to consider planning for first cutting to be impacted and to consider planting annual forages to cover the possible shortage. If taking that route, it is important to order seed now as supplies could run low this spring.



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Alfalfa Weevil Management Guidelines Northern Indiana. Table courtesy of Purdue Extension’s Christian Krupke and John Obermeyer.

Heat Units	% Tip Feeding*	Advisory
250		Begin sampling.
300	0-40 (30)*	Re-evaluate in 7-10 days using the appropriate heat units or treat immediately with a residual insecticide if 3 or more larvae are noted per stem and % tip feeding is above 50%
400	60 (50)**	Treat immediately with a residual insecticide.
500	75	Treat immediately.
600	75+	If cutting delayed more than 5 days, treat immediately.
750		If harvested or harvesting shortly, return to the field in 4-5 days after cutting and spray if 1) there is no regrowth and weevil larvae are present OR 2) feeding damage is apparent on 50% of the stubble and weevil larvae are present.

\* Note if larvae are still present, actively feeding and/or diseased.

\*\* Shorter than normal growth at beginning of season.

Black cutworm (BCW) and true armyworm (TAW) continue to be a non-story so far this spring with no captures this past week in traps placed in St. Joseph and Kalamazoo Counties. Reports of a few moths of each species being captured in east central Michigan came in this week. Aside from a surge of TAW catches during the second week of April in LaPorte County, Indiana traps have also been pretty quiet. As a reminder, TAW females blown in on northerly winds will look to lay eggs in grass crops/weeds while BCW will target fields with dense, low-lying broadleaf plants.

## Calendar

Titles are clickable links to online content when highlighted and underlined

- May 6** [Field Crops Virtual Breakfast](#). 7-8am. Rhizoctonia Management in Sugar Beets with Daniel Bublitz. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.
- May 13** [Field Crops Virtual Breakfast](#). 7-8am. Postemergence Weed Control with Erin Burns. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.
- May 20** [Field Crops Virtual Breakfast](#). 7-8am. Head Scab Management with Dennis Pennington and Marty Chilvers. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.
- May 27** [Field Crops Virtual Breakfast](#). 7-8am. Dry Bean Considerations with Scott Bales. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.
- July 12&13** [Large Truck and Tractor Tire Collections](#). 9am-12pm (12<sup>th</sup>) and 4-7pm (13<sup>th</sup>). Van Buren County Building & Grounds, 753 Hazen Street, Paw Paw. The Van Buren Conservation District is hosting large truck and tractor tire collections this year at no direct cost to you. Sign up at the link above, you will hear from the recycling coordinator, Emily Hickmott, by phone or email with more details closer to the event. You can also email her at [resourcerecovery@vanburencd.org](mailto:resourcerecovery@vanburencd.org) with any questions.

## MSU Extension Digest Briefs

### PUBLISHED ON APRIL 29, 2021

- [RHIZOCTONIA ROOT AND CROWN ROT A SERIOUS ISSUE WITH MICHIGAN SUGARBEETS](#)  
Daniel Bublitz, MSU sugarbeet specialist, will focus on rhizoctonia root and crown rot during the Field Crops Virtual Breakfast on May 6, 2021.
- [SOUTHWEST MICHIGAN FIELD CROPS UPDATE – APRIL 29, 2021](#)  
Unusually dry conditions have provided needed opportunities to get field work done this spring, and upcoming rains may provide some relief needed to ward off drought impacts.
- [MSU GREENHOUSES: INFRASTRUCTURE THAT LEADS TO INNOVATION](#)  
Greenhouses are an invaluable resource for faculty and students, but to maintain MSU’s leadership in plant science, upgrades are critical.

### PUBLISHED ON APRIL 27, 2021

- [UNDERSTANDING THE ROLE OF CARBON IN AGRICULTURE – PART 2](#)  
Carbon capture and storage; is it like trying to catch lightning in a bottle?
- [WATER UP AND IRRIGATE IN](#)  
Over the wide variety of planting and soil-applied herbicide situations, most irrigated producers will gain from an early-season irrigation application. The limiting factor is whether the irrigation system is ready to go.
- [OAK WILT AWARENESS MONTH IN MICHIGAN](#)  
By proclamation of the governor, May has been designated as Oak Wilt Awareness Month in Michigan to bring statewide attention to the value of oaks to Michigan’s environment, recreation and wood products industries, and the need to raise awareness about prevention and management of oak wilt, a disease killing red oaks across the state every year.
- [WHEAT WATCHERS REPORT – APRIL 26, 2021](#)  
The wheat watchers report will now be shared periodically through Michigan State University Extension.

### PUBLISHED ON APRIL 22, 2021

- [FALL AND WINTER DROUGHT COULD CAUSE CHALLENGES IN CROPS](#)  
Below normal precipitation during the fall and winter has resulted in a decline in groundwater levels. Producers need to prepare for potential challenges, especially if they irrigate crops.
- [SOYBEAN PLANTING CONSIDERATIONS: PLANTING DATE, SEEDING RATE AND ROW SPACING IMPLICATIONS](#)  
Soybean planting date, seeding rate and row spacing is important to maximize yield. Check out these factsheets summarized by university agronomists.
- [SOYBEAN PLANTING-TIME MANAGEMENT CONSIDERATIONS](#)  
Matching planting time with optimal variety maturity group and seeding rate can increase yield while minimizing input costs.

### PUBLISHED ON APRIL 20, 2021

- [UNDERSTANDING THE ROLE OF CARBON IN AGRICULTURE – PART 1](#)  
Old McDonald had some...carbon?

### PUBLISHED ON APRIL 19, 2021

- [COVER CROP TERMINATION TIMING TO HELP MANAGE SOIL MOISTURE](#)  
Timing of cover crop termination can have significant benefits in wet and dry springs.

### PUBLISHED ON APRIL 16, 2021

- [STAYING CONNECTED AND FINDING SUPPORT DURING THE PANDEMIC](#)  
Make the most of your day by joining our “Lunch Break” team. Get to know your local educators, learn about upcoming events and local resources to help you and your farm thrive.

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- [UPDATED COVER CROP TERMINATION PUBLICATION AVAILABLE FOR 2021](#)  
Evaluate your cover crop termination strategy with this updated for 2021 publication.

### **PUBLISHED ON APRIL 15, 2021**

- [ASSESSING FROST/FREEZE DAMAGE TO EMERGED SOYBEANS](#)  
Soybean fields planted in March or early April are emerging and are at greater risk of being damaged by late spring frost/freezing events.
- [WHAT ARE MY OPTIONS WHEN RENEWING MY PESTICIDE CERTIFICATION?](#)  
Pesticide applicators can now take their certification exam remotely.

### **PUBLISHED ON APRIL 14, 2021**

- [LAND RENT CALCULATOR](#)  
This is an Excel tool designed to help producers consider the impact of land rent payments against their overall farm profits.
- [WHEAT GROWTH STAGE 6 SIGNALS GAME ON!](#)  
The first joint stage is a game-changer in the development and management of wheat—the plants begin to invest in their reproductive phase. The timing is right for growers to gauge their progression of management practices.
- [NEGOTIATING REASONABLE LAND RENT IN TIMES OF HIGH MARKET PRICES](#)  
Key talking points can help both landowners and producers understand farmland value.

### **PUBLISHED ON APRIL 13, 2021**

- [CROP \\*A\\* SYST FOR FIELD CROP AND VEGETABLE PRODUCERS \(FAS110\)](#)  
Farmers may use this bulletin to assist in becoming MAEAP verified.

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