

## Southwest Michigan Field Crops Updates June 12, 2020

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.

## Coronavirus Food Assistance Program

The Coronavirus Food Assistance Program, or CFAP, provides financial assistance to producers of agricultural commodities who have suffered a five-percent-or-greater price decline or who had losses due to market supply chain disruptions due to COVID-19 and face additional significant market costs. USDA is [accepting applications](#) now through August 28, 2020. Producers should apply through the Farm Service Agency at their local USDA Service Center.

Eligible commodities include but are not limited to:

- **Non-specialty Crops:** malting barley, corn, soybeans, sorghum, sunflowers, and hard red spring wheat
- **Livestock:** cattle, hogs, and sheep (lambs and yearlings only)
- **Dairy**
- **Specialty Crops** (fruits, vegetables, etc.)

To learn more about CFAP:

- Download the [final rule](#), [notice of funding availability](#), and [cost-benefit analysis](#) from the [Farmers.gov](#) website.
- Attend a webinar event. The 3<sup>rd</sup> webinar being offered—**Non-Specialty Crop & Livestock Producers**—will take place on June 16, 2020 at 3:00 p.m. EDT. You can [register online](#) to get the webinar link.
- Call the hotline for help: 877-508-8364. USDA recommends calling this number before calling county FSA office. They will connect you to the county office.
- Download the [stakeholder toolkit](#).

## Xtend Soybean Weed Control Options

For those who planted Xtend soybean this season, you likely have heard about the 9th Circuit Court of Appeals June 3 ruling on three EPA dicamba labels: XtendiMax, FeXapan, and Engenia. There was much confusion and concern about what this would mean for farmers this past week while the registrants appeal this ruling. The EPA released information on June 8 stating: 1) any sale or distribution of these three products is now prohibited, and 2) farmers who have already purchased product can apply it through July 31<sup>st</sup>. As the label restricts applications to no later than 45 days after planting, this date should accommodate all in-season applications in soybean for the 2020 growing season. Interestingly, since Tavium (diglycolamine salt of dicamba, Group 4, and S-metolachlor, Group 15) was not included in the original lawsuit, its use has not been banned by the court's ruling. For those who were not able to purchase one of the three disallowed dicamba products, ask your chemical dealer about the possibility of acquiring Tavium for any needed POST applications to control marehail, waterhemp, and other challenging broadleaf weeds.

MSU Extension weed specialist Christy Sprague wrote an article this week, "[EPA's dicamba cancellation order: What does this mean for Michigan farmers?](#)", explaining options for postemergence weed control in light of this ruling. Purdue weed specialists Bill Johnson and Marcelo Zimmer also wrote [a similar article](#) on the topic.

# Have You Lost Nitrogen?

With heavy rains that hit our area in mid- and late-May, many have concerns about nutrient losses, particularly nitrogen (N), due to leaching, runoff or denitrification. In a special edition of the MSU Extension Field Crops Virtual Breakfast this week, MSU crop nutrient specialist Kurt Steinke addressed this topic as many in our region and in the central region are facing N loss issues. There are three main questions to ask.

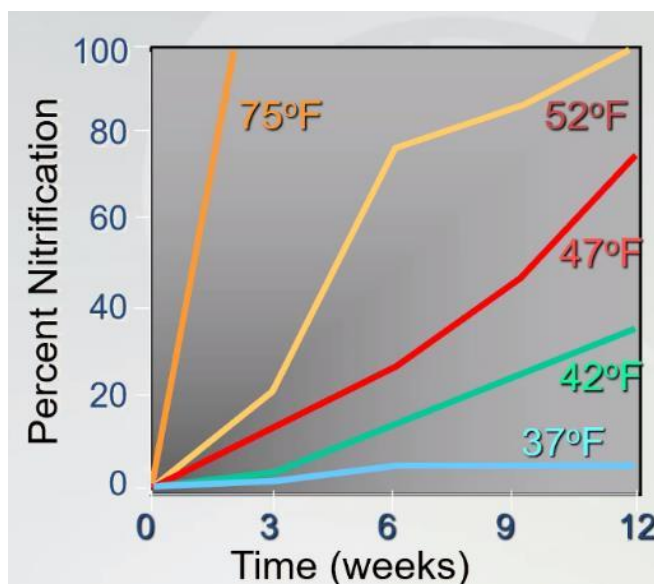


1) **What type(s) of soil are involved?** If you have heavier soil with a fair amount of clay, leaching is usually not much of a concern, but with sandy loams and loamy sands, leaching is likely. With loams and finer-textured soils, denitrification is a concern as soil pore spaces will be filled with water for longer periods of time resulting in anaerobic conditions.

2) **What form of N was applied?** Common types of N fertilizer used in Michigan are applied as ammonium, or  $\text{NH}_4^+$  (e.g. ammonium nitrate/sulfate) or are converted to  $\text{NH}_4^+$  (e.g. anhydrous ammonia, urea). The positively-charged  $\text{NH}_4^+$  form and urea (neutral) can be leached in very sandy soils with heavy rainfall that occurs immediately after application. Use of urease inhibitors keeps urea in the neutral form which can increase the risk of downward movement with heavy rains. The negatively-charged nitrate ( $\text{NO}_3^-$ ) form is easily leached in all soil types since clay and organic fractions are negatively charged as well. Plants can uptake both  $\text{NH}_4^+$  and  $\text{NO}_3^-$  forms of N although mostly (~75%) prefer  $\text{NO}_3^-$ .

3) **What form was the N in when heavy rainfall events occurred?** To know this, we need to understand how N changes form and under what conditions. What form of N was applied, when, under what conditions, and what soil conditions have existed since application? Ammonia ( $\text{NH}_3$ ) will react with water to form  $\text{NH}_4^+$ , assuming it does not volatilize into the air first, and swing more to the  $\text{NH}_4^+$  side under acidic conditions. Ammonium converts to  $\text{NO}_3^-$  during nitrification, a process performed by bacteria. Nitrification is an aerobic process and occurs quickly in well-drained, warm soils—see the figure below for rates at different soil temperatures. If excess rainfall occurs,  $\text{NO}_3^-$  can be leached out of the rooting zone. Denitrification is a process whereby  $\text{NO}_3^-$  is converted to either  $\text{N}_2$  or  $\text{N}_2\text{O}$  gas and is lost from the soil system. This process is performed by bacteria under anaerobic conditions such as ponded or waterlogged soils.

Want to learn more about N loss potential, including a discussion of yield losses, rescue N applications, and specific scenarios? Watch the Virtual Breakfast recording, "[Managing N Loss from Flooding.](#)"



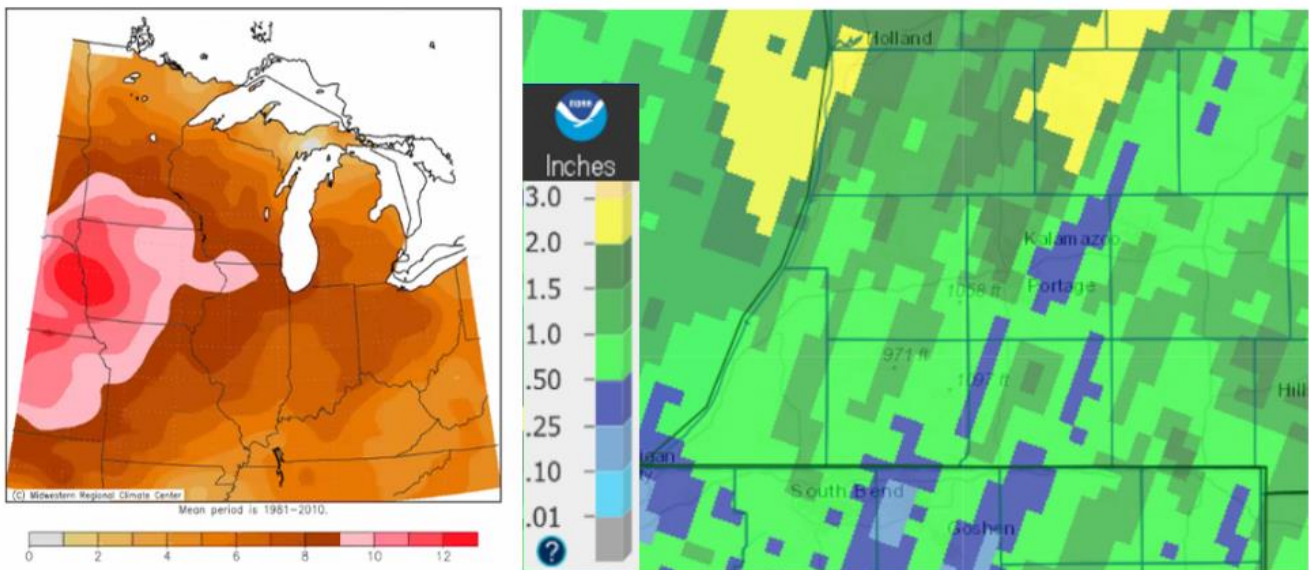
Rate of nitrification occurring at different soil temperatures. Nitrate conversion occurs 2x faster for each 10 °F above 50 °F. Graph courtesy of Dr. Kurt Steinke.

# Interested in Solar Photovoltaic on Your Farm?

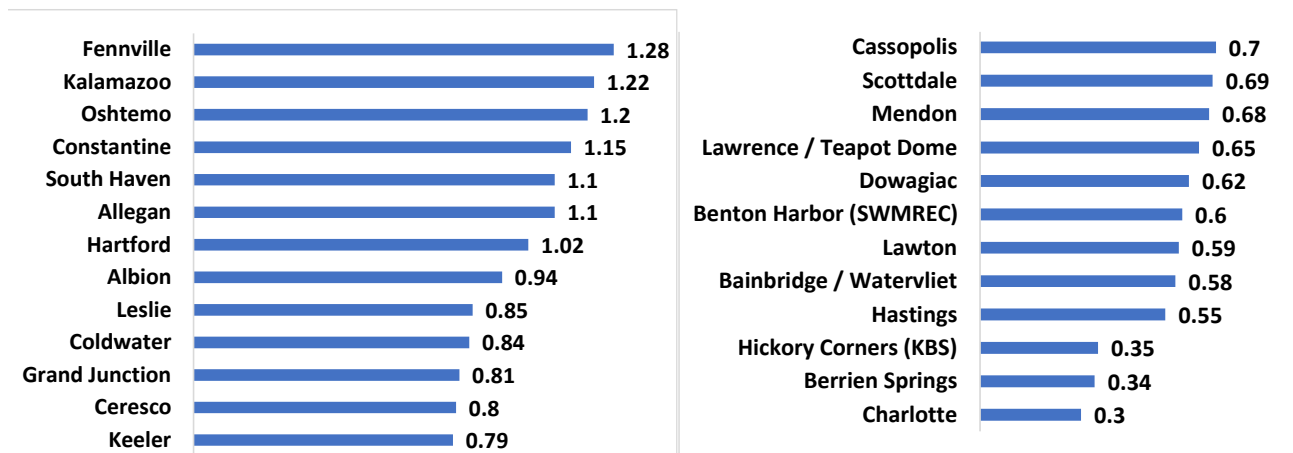
**What is the payback for Solar PV systems?** This is a common question with not such as easy answer. An upcoming webinar series, **Hands-on PV Solar Simulation Modeling Workshop**, is a 4-part webinar sponsored by a grant from North Central Region SARE. Topics include: Location and System Design; System Cost and Financial Parameters; Incentives, Electrical Rate Schedules, Electrical Loads; and Interpreting Model Output, Optimizing a System to Match Your Goals. The series will be held at 11:00 AM EDT on July 28 and 30 and August 4 and 6. [Register in advance for this meeting.](#) Participants will want to download the [NREL System Advisor Model](#) prior to attending the first workshop.

## Weather and Crop Update

**Weather.** Warm and dry conditions prevailed in the region again this past week, and aside from the scattered thunderstorms that came through from the remnants of Tropical Storm Cristobal, we received no rain. Average rainfall was 0.8” with a range of 0.3” to 1.3” as recorded at Enviroweather stations in the region.

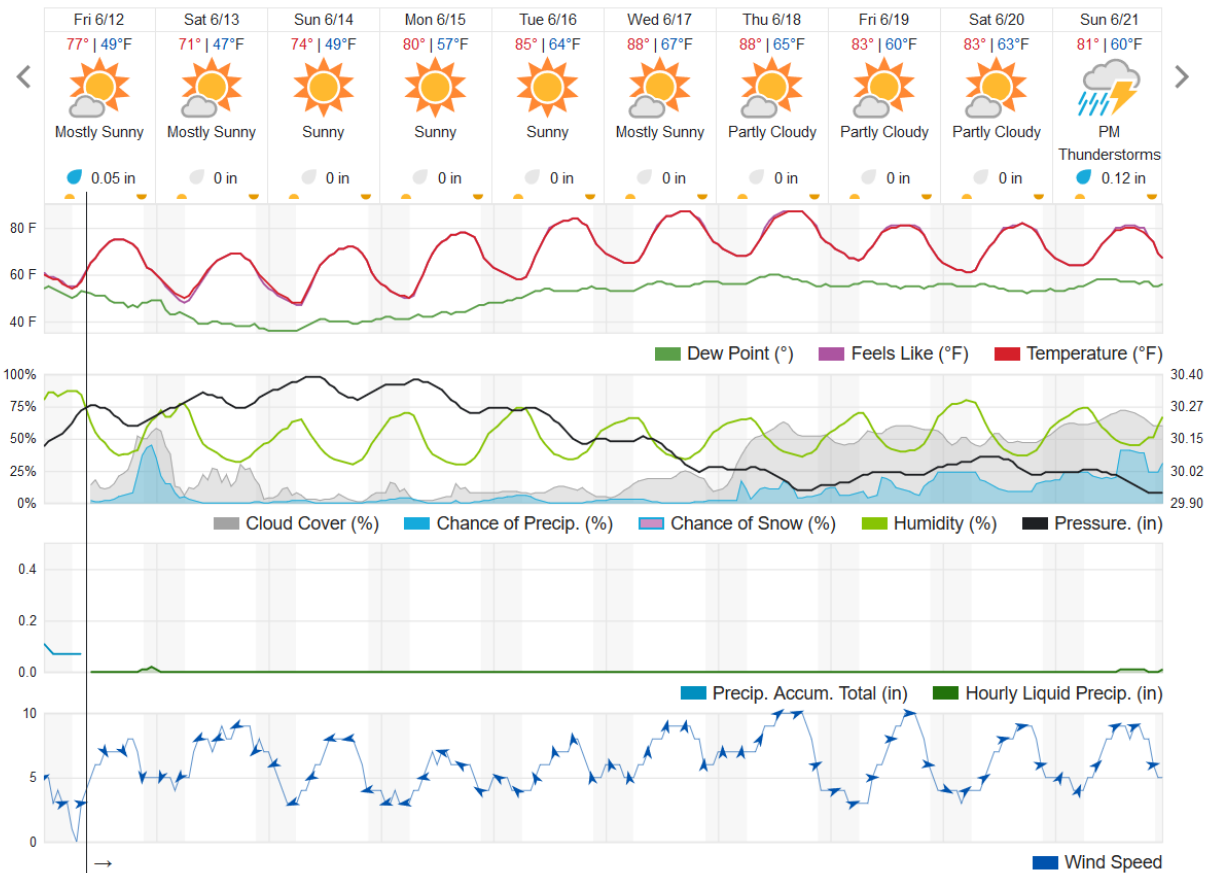


Mean temperature departures from normal (left) and precipitation totals (right) from June 3-9. All of that rain fell this past Tuesday through Wednesday.

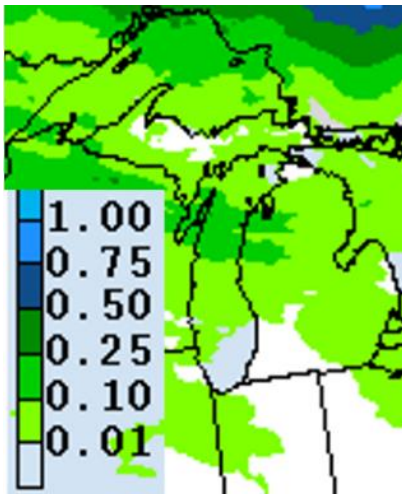


Rainfall on June 8-10 in the south central and southwest region as measured at Enviroweather stations.

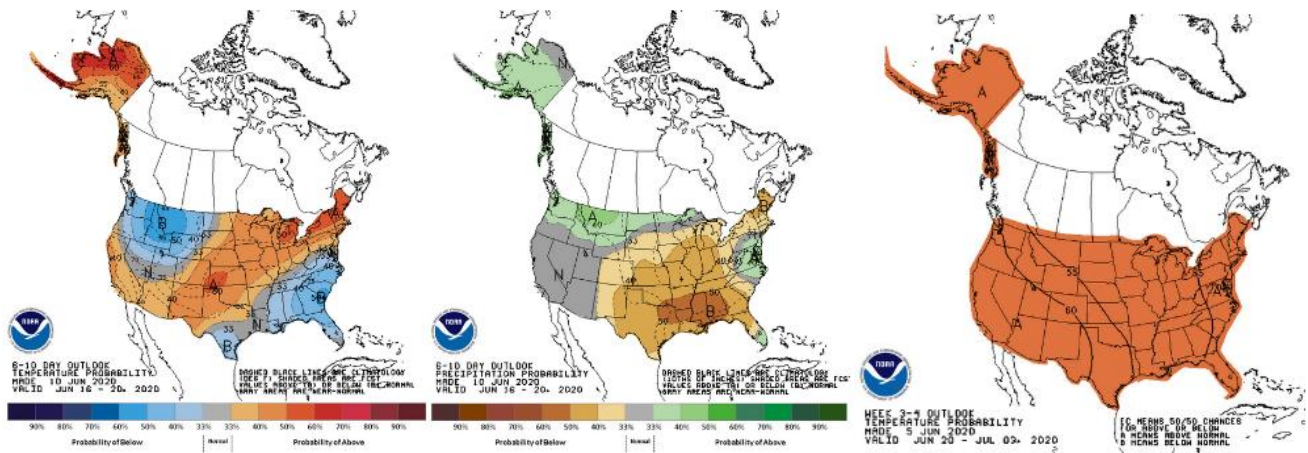
The forecast calls for cooler than normal conditions over the extended weekend due to an approaching cold front out of Canada followed by a return to warmer-than-normal conditions for next week. A high pressure system will settle over the upper Midwest bringing dry conditions until at least the end of next week.



The 10-day weather forecast for Kalamazoo as of June 12, 2020. Cooler than normal temps over the extended weekend will give way again to warmer than normal temps next week with not much chance of rainfall in sight.

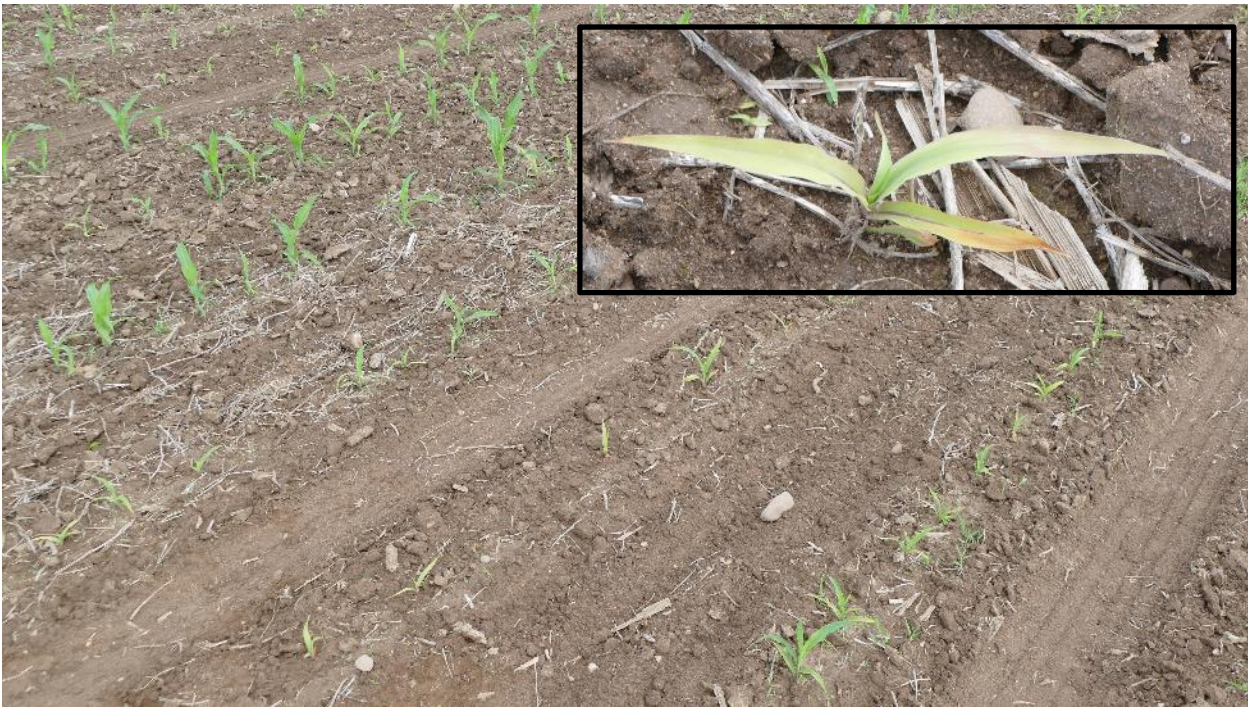


Precipitation forecast for June 11-18. That pretty much tells the story right there...no rain expected this coming week in the southwest.



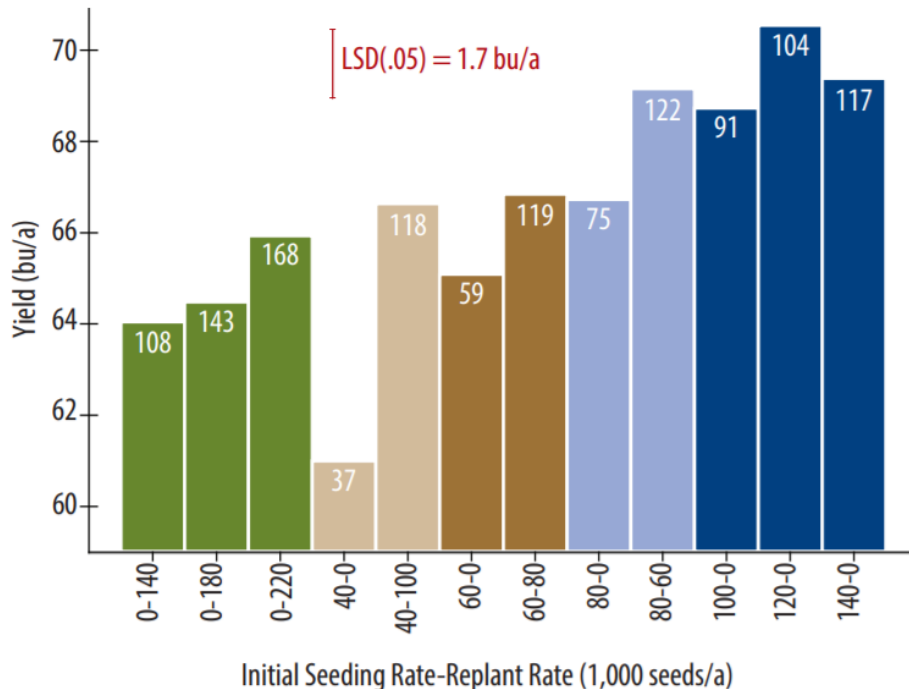
The 6-10 day outlook (June 16-20) for temperature (left) and precipitation (center) calls for warmer and drier than normal conditions. The 8-14 day also calls for warmer temps but turning to a slight chance of wetter than normal. Interestingly, the 3-4 week outlook (June 20 – July 3, right) is pretty confident that we’ll have warmer than normal temps for the official start of summer.

**Corn.** According to the USDA’s Crop Progress report, 92% of the state was planted as of June 7 with 76% emerged. We estimate that nearly all of the corn in the south central and southwest is planted and emerged with most fields between V3-V5. We have received calls about corn that is non-uniform with plants at V5 right next to plants at V2 that look stunted and yellowed. Gathering information, and reaching out to our campus weed specialists Erin Burns and Christy Sprague, it appears the culprit may be the herbicide applications that were made earlier in the season on variable soils. In one case, Capreno + atrazine was applied when most of the field was ~V2. Many labels have different rates based on soil texture, and some even recommend not applying on lighter soils with soil organic matter less than 2%. Dr. Sprague said she has seen injury from thien carbazonemethyl—the ALS inhibitor in Capreno—on lighter soils. If you see stands that don’t look right, take pictures, pull a few samples, and send us a note, we’ll help you troubleshoot what might be happening.



**Soybeans.** According to the Crop Progress report, 88% of soybean in the state has been planted and 68% emerged. Similar to corn, we estimate that nearly all soybean has been planted, although a number of fields in low-lying areas are getting replanted as waterlogged original plantings have not fared well. Based on previous

research at MSU, the University of Wisconsin, and other universities, MSU Extension does not recommend tearing up the original planting but rather filling in to get final stands up to the originally intended plant density. I have shown the graphic below before; in this case, focus on the green, brown and light blue bars which represent poor stands that resulted in 40k, 60k or 80k plants/ac. The green bars with the 0 before the dash represent tearing up a planting and seeding with 140k, 180k or 220k seeds/ac. The number following the dash is the number of seeds/ac that were sown in a replant situation. You can see that interseeding into a poor stand resulted in a comparable or higher yield compared with tearing up a stand and starting over.



Yield (bu/a) of twelve replant scenarios across three planting dates (early May, late May, and mid-June). The number printed at the top of the bars represent the final plant stand (1000 plants/a) after replanting. The numbers below the bars indicate the initial seeding rate followed by the replant seeding rate. Taken from “[Think Twice Before Replanting Soybeans](#)” published by UW-Madison.

**Alfalfa.** First cutting in most fields has been taken and regrowth is well underway. Reports have come in around the state of some alfalfa weevil feeding on regrowth, but MSU Extension field crop entomologist Chris DiFonzo says the greater concern at this point is potato leafhopper (particularly when hot and dry) and other pests that likely rode the storm fronts from Cristobal. MSU Extension ag climatologist Jeff Andresen says that since the storm came from the Gulf area and even further south, we need to be scouting for insects and pathogens that would typically not make it this far north (e.g. southern rust). Purdue entomologists [recently published an article](#) making the same recommendations. The answer: scout, scout, scout.

**Wheat.** Most fields in the southwest have completed pollination (Feeke’s 10.5.3) and have begun the ripening process. Fields should near harvest shortly after the July 4<sup>th</sup> weekend. If you missed the Wheat Virtual Field Day on June 10<sup>th</sup>, recordings will be available on the [Michigan Wheat website](#) by early next week. Here is the line-up from the field day:

Christy Sprague – Weed Control

Manni Singh & Dennis Pennington – Precision Planting

Marty Chilvers, Martin Nagelkirk – Disease

Dennis Pennington – Planting Date/Seeding Rate and field scouting report

Kurt Steinke – Start Right to Finish Well: Wheat Grain and Straw Production

Eric Olson – Variety Improvement

# Calendar

Titles are clickable links to online content when highlighted and underlined

**June 18+** [MSU Extension Field Crops Virtual Breakfast](#). 7:00-7:30 AM. [Participants must sign up](#) to receive an email notification with instructions for joining the Virtual Breakfast. You only need to do this once and you will receive the Zoom link and call-in phone number, as well as weekly reminders every Wednesday.

The Virtual Breakfast has become one of our team's flagship outreach programs. Here is the tentative schedule. [RUP credits are now available for the live sessions](#) and **\*\*NEW\*\*** we were able to get approved to offer 1 credit for each live session. If you can't participate in the live session on Thursdays at 7 a.m., you can view the recorded version at any time. Recordings are closed-captioned and available on the [MSU Extension Field Crops webpage](#) and social media platforms: [Spotify](#), [Apple Podcasts](#), [YouTube](#), [Facebook](#) and [Twitter](#).

June 18 – Sugar beet Cercospora and BeetCast with Daniel Bublitz

June 25 – Drainage design considerations with Ehsan Ghane

July 2 – Farm stress with Eric Karbowski

July 9 – Organic field crop production with Vicki Morrone

July 16 – Insects taking flight with Chris DiFonzo

July 23 – Tar spot and white mold with Martin Chilvers

July 30 – Cover crops after wheat with Dean Baas

Aug. 6 – Irrigation and diseases with Lyndon Kelley and Martin Chilvers

Aug. 13 – Alfalfa autotoxicity with Kim Cassida

Aug. 20 – Grain marketing with Aleks Schaefer

Aug. 27 – Wheat planting with Dennis Pennington

Sept. 3 – Corn silage mycotoxins with Manni Singh

Sept. 10 – Industrial hemp with Kurt Thelen

**June 16** [CFAP Webinar for Non-Specialty Crop & Livestock Producers](#). 3:00 p.m. EDT. Coronavirus Food Assistance Program webinar hosted by USDA-FSA. [Register online](#) to get the webinar link.

## MSU Extension Digest Briefs

### Cercospora leaf spot management topic of June 18 Field Crops Virtual Breakfast

*PUBLISHED ON JUNE 11, 2020*

Join the MSU Extension Field Crops Virtual Breakfast as Daniel Bublitz discusses Cercospora leaf spot and its management in sugarbeets.

### EPA's dicamba cancellation order: What does this mean for Michigan farmers?

*PUBLISHED ON JUNE 11, 2020*

Options for weed control in Roundup Ready 2 Xtend soybean.

### Conventional drill versus precision planting in wheat: What do we know so far?

*PUBLISHED ON JUNE 8, 2020*

Michigan State University research is looking at the benefits of precision planting wheat compared to conventional drill.

### Significant flooding in Michigan has caused hardships for agriculture, MSU Extension responds.

*PUBLISHED ON JUNE 5, 2020*

MSU Extension has developed a resource a document to help support agricultural producers making flood-related decisions.

### **Southwest Michigan field crop update – June 4, 2020**

*PUBLISHED ON JUNE 4, 2020*

Warm and dry conditions this past week made way for good progress with field work. Weather will continue to be conducive through early next week.

### **Irrigation season: Start with inspections and repairs**

*PUBLISHED ON JUNE 3, 2020*

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.

### **Irrigation management to reduce cost and foliar disease**

*PUBLISHED ON JUNE 1, 2020*

Understanding the disease triangle, water management and leaf wetness influence on foliar disease, when to apply a fungicide, and a review of what we've learned so far on how to best manage tar spot.

### **Severe grub damage spotted in northern Michigan grass hay field**

*PUBLISHED ON JUNE 1, 2020*

White grubs can cause extensive damage in grass hay fields as well as a handful of other field crops. Scouting is a critical first step for management.

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