

## **Southwest Michigan Field Crops Updates**

**October 1, 2019**

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.

### **Resources for Corn Silage**

MSU Extension Cropping Systems Agronomist Dr. Manni Singh is offering farmers a great opportunity – to have corn silage samples checked for 26 different mycotoxins for FREE! Samples, of approximately one pound, should be collected from various locations in the same field and then either dried or frozen soon after collection. A data sheet is available to record information about the location, crop practices and corn crop. This information must be completed before samples will be analyzed.

The mycotoxin analysis results will be communicated back to the farmer so that any needed feeding rate adjustments can be made. This 2-year project aims to advance the knowledge of predicting when and where mycotoxins will be a problem and better enable farmers to reduce their risk. Funding for this project are provided by the Michigan Alliance for Animal Agriculture, Project GREEN and The Michigan Milk Producers Association. Farmers that are interested in participating should contact MSU Extension Educators Phil Durst (989-387-5346), Phil Kaatz (810-338-5242) or Martin Mangual (787-378-1720).

Another resource for silage sellers and buyers: the [Michigan Hay Listing Network](#) is adding corn silage to their list of available forages. There are currently no postings in the database, so sellers are encouraged to utilize the tool to market their 2019 crop. MSU Extension farm management educator Jon LaPorte recently wrote an excellent article, [Pricing standing corn silage](#), to help in determining a fair price for a crop that will be cut for silage.

### **Neonicotinoid Soybean Seed Treatments Provide Negligible Benefits to US Farmers**

A study to investigate the benefit of neonicotinoid seed treatment use in soybean was released last month. Researchers from 14 universities across the Midwest, including MSU, were involved in the study. The full report (7 pages) [can be found here](#). The following summary was taken from the report.

“Soybean seed yield data from 194 randomized and replicated field studies, conducted specifically to evaluate the effect of seed treatments on soybean seed yield at sites within each of 14 states from 2006 through 2017, were assembled for this study. The final database included 11,146 plot-specific soybean seed yields. For all experiments, weather data, soil pH and information about nine major management practices, including irrigation, planting date, cultivar maturity group, tillage operations, previous year crop, row spacing, seeding rate, double crop system, and manure application were recorded.

“Our analysis, spanning 12 years and 14 soybean-producing states, provides **no empirical support for continuing the current approach of blanket NST use in soybeans**. On the contrary, our data suggest that this approach provides little to zero net benefit in most cases, and that meaningful gains are likely to be realized by site-specific management practices, independent of NST use. Our data provide some measure of security for soybean producers and other agricultural professionals that pest pressure is low across the key soybean growing regions of the US. In the absence of economically damaging pest populations, insecticides will lead to economic losses.”

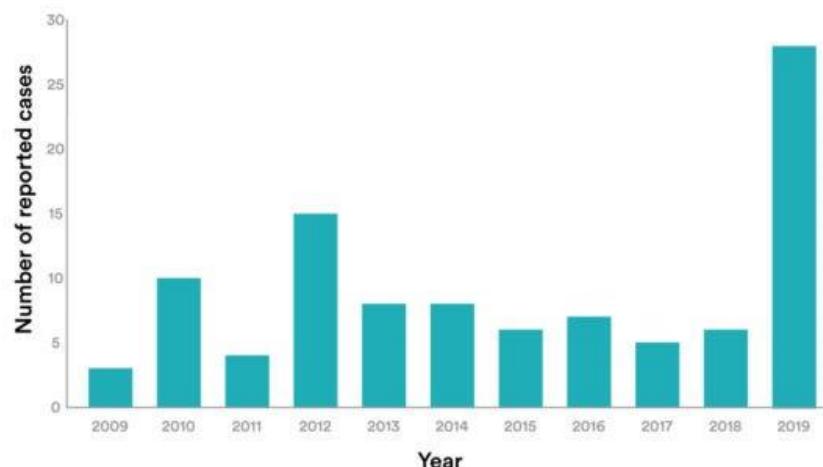
## Eastern Equine Encephalitis

Many of you have likely seen the recent news about the Eastern equine encephalitis (EEE) outbreak in parts of Michigan. Due to the severity of the outbreak, the [Michigan Department of Health and Human Services is urging people in the eight affected counties to consider cancelling, postponing or rescheduling outdoor events in the evening or early morning hours](#), especially if they involve those most at risk (children younger than 15 and adults older than 50). “New cases [in 2019] expand the geographic area affected by human EEE cases to include Barry, Cass and Van Buren counties, along with previously identified cases in Kalamazoo and Berrien counties. Two of these additional cases, in Cass and Van Buren counties, were fatal, as was an earlier case in Kalamazoo County.”

Why are there so many cases this year? The short answer: they don’t know. The disease is vectored by a mosquito, ???, that feeds on birds that carry the disease. This article, “[What to know about EEE, a mosquito-borne virus on the rise](#)”, from STAT News, gives a pretty thorough explanation of the disease, the mosquito, and other topics of interest. Although not fail-safe, the recommended

precaution is to avoid outdoor activity before dawn or after dusk until a hard frost occurs. If you do need to be outside at those times, take appropriate measures (e.g. wear long clothing, use insect repellents containing DEET, etc.) to minimize your risk of exposure.

**Eastern equine encephalitis virus neuroinvasive disease cases reported by year, 2009-2019**



SOURCE: ARBONET, ARBOVIRAL DISEASES BRANCH, CDC.

Number of EEE cases reported in the past decade in the U.S.

The Michigan Department of Health & Human Services and 12 local health departments will be conducting aerial spraying in 14 counties to combat this mosquito-borne disease. Spraying is scheduled to take place starting Sunday, September 29th starting at 8 pm. However, the ability to spray is weather dependent and the schedule may change. Residents are encouraged to visit [www.Michigan.gov/EEE](http://www.Michigan.gov/EEE) for up-to-date information. Spraying will occur in St. Joseph and Branch counties, as well as 12 other counties outside of Branch-Hillsdale-St. Joseph Community Health Agency. Aerial spraying is conducted by low-flying aircraft, beginning in the early evening and continuing up until 4:30 am the next morning when mosquitos are more active. It is also when fish are less likely to be at the surface feeding and honeybees are most likely to be in their hives. However, owners should cover small ornamental fishponds during the night of spraying.

## End-of-Season Corn Development

It's not news that corn planting date this year was all over the map. Estimates of when fields will reach black layer are ranging from now through the second or third week of October. As a reminder, once the crop reaches physiological maturity, or black layer, it is considered safe from yield losses due to a hard freeze.

Purdue's corn agronomist Bob Nielsen recently wrote about our chances of seeing the corn crop through to maturity before a frost this year. Here is a condensed version of his article, "[Predicting Corn Grain Maturity Dates for Delayed Plantings](#)".

Based on field research conducted in Indiana and Ohio (Brown, 1999), we know that corn hybrids typically mature with fewer accumulated heat units when planted late compared to planting on "normal" dates. This knowledge provides the basis for our hybrid maturity recommendations to farmers faced with late plantings (Nielsen, 2019b; Nielsen & Thomison, 2003).

That same research provided insight into both the calendar and thermal times typically required for grain at various stages of development to reach physiological maturity (kernel black layer, R6). The research was conducted at two locations in Indiana (west-central and southeast) and two locations in Ohio (northwest and southwest) with three hybrids representing 97, 105, and 111 "day" relative maturities planted in early May, late May, and early June. The calendar and thermal times from silking to black layer for the three hybrid maturities are provided in Tables 1 – 3 that follow.

While there were slightly different responses among the four locations of the trial, there did not seem to be a consistent north / south relationship. Consequently, I believe growers can use the results summarized in the following tables to "guesstimate" the number of calendar days or heat units necessary for a late-planted field at a given grain fill stage to mature safely prior to that killing fall freeze.

**Table 1.** Calendar days and GDDs to black layer from grain fill stages R1 - R5 for an adapted 111 "day" corn hybrid with a GDD rating of 2760 GDDs from planting to black layer. Data averaged over eight trial sites.

Calendar days to kernel black layer (R6) from...					
<b>Planting Date</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>	<b>R5</b>
Early May	63	51	47	37	20
Late May	65	53	48	38	20
Mid-June	68	55	51	40	22

GDDs to kernel black layer (R6) from...					
<b>Planting Date</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>	<b>R5</b>
Early May	1231	965	884	670	327
Late May	1165	919	811	604	289
Mid-June	1029	781	681	489	217

*Adapted from Brown (1999).*

R1 = Fresh silks; R2 = Blister; R3 = White kernels w/ milky fluid; R4 = Dough, no visible denting; R5 = Late dent, all kernels visibly dented

**Table 2.** Calendar days and GDDs to black layer from grain fill stages R1 - R5 for an adapted 105 "day" corn hybrid with a GDD rating of 2695 GDDs from planting to black layer. Data averaged over eight trial sites.

<b>Planting Date</b>	Calendar days to kernel black layer (R6) from...				
	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>	<b>R5</b>
Early May	60	49	45	35	20
Late May	63	51	45	36	20
Mid-June	65	54	50	39	24

<b>Planting Date</b>	GDDs to kernel black layer (R6) from...				
	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>	<b>R5</b>
Early May	1194	945	866	658	337
Late May	1134	902	784	576	297
Mid-June	1021	786	691	491	259

*Adapted from Brown (1999).*  
 R1 = Fresh silks; R2 = Blister; R3 = White kernels w/ milky fluid; R4 = Dough, no visible denting; R5 = Late dent, all kernels visibly dented

**Table 3. Calendar days and GDDs to black layer from grain fill stages R1 - R5 for an early 97 "day" corn hybrid with a GDD rating of 2578 GDDs from planting to black layer. Data averaged over eight trial sites.**

Calendar days to kernel black layer (R6) from...					
<b>Planting Date</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>	<b>R5</b>
Early May	60	47	45	36	20
Late May	61	48	44	36	19
Mid-June	61	47	44	36	21

GDDs to kernel black layer (R6) from...					
<b>Planting Date</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>	<b>R5</b>
Early May	1176	901	841	665	319
Late May	1137	878	804	627	279
Mid-June	1010	743	671	482	223

*Adapted from Brown (1999).*

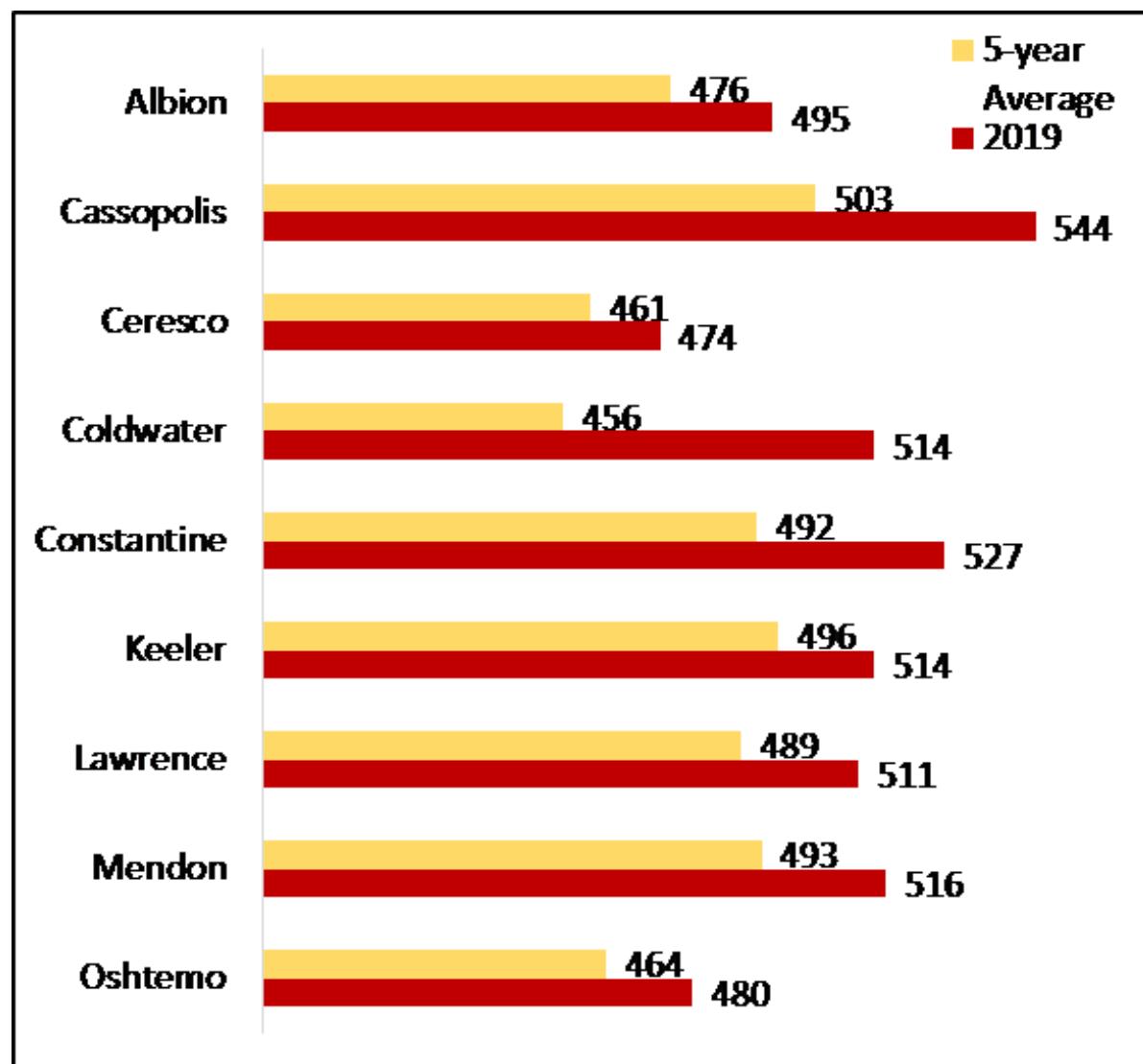
R1 = Fresh silks; R2 = Blister; R3 = White kernels w/ milky fluid; R4 = Dough, no visible denting; R5 = Late dent, all kernels visibly dented

## Weather and Crop Update

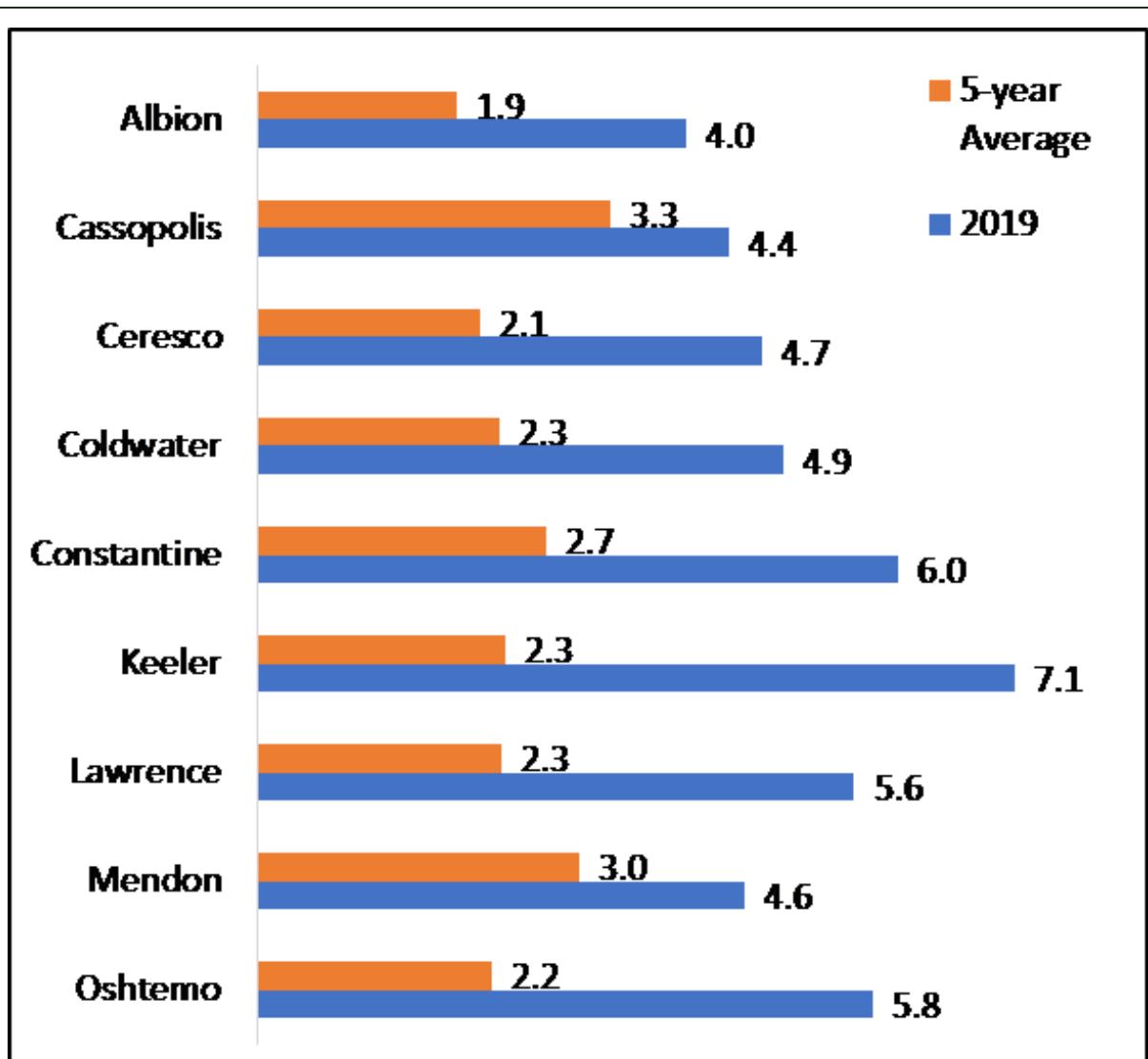
Corn harvest has not yet begun; however, we are not that far behind the average of acres of 5% harvested by this time. According to the latest USDA Crop Progress report, 72% of corn has reached the dent stage in MI—much improved from a week ago (53%) but well behind the average (90%). Only 17% of the crop has reached maturity which again is well behind the average of 53%. For soybean, 56% have started dropping leaves compared with the 5-year average (77%). We are not that far off the average with harvesting at 7% compared with 10% harvested on average. The next few weeks will be critical in whether crops will make it to maturity before a killing frost.

As predicted, temperatures in September were warmer than normal overall with an average of 27 growing degree days (base 50) more than the 5-year average across the region. The average high and low temperatures for this area in October are 60 and 41 °F, respectively, and we will see those cool temps return after this mini-heat wave passes. However, all forecasts, including the 1-month outlook, call for above-normal temps this month.

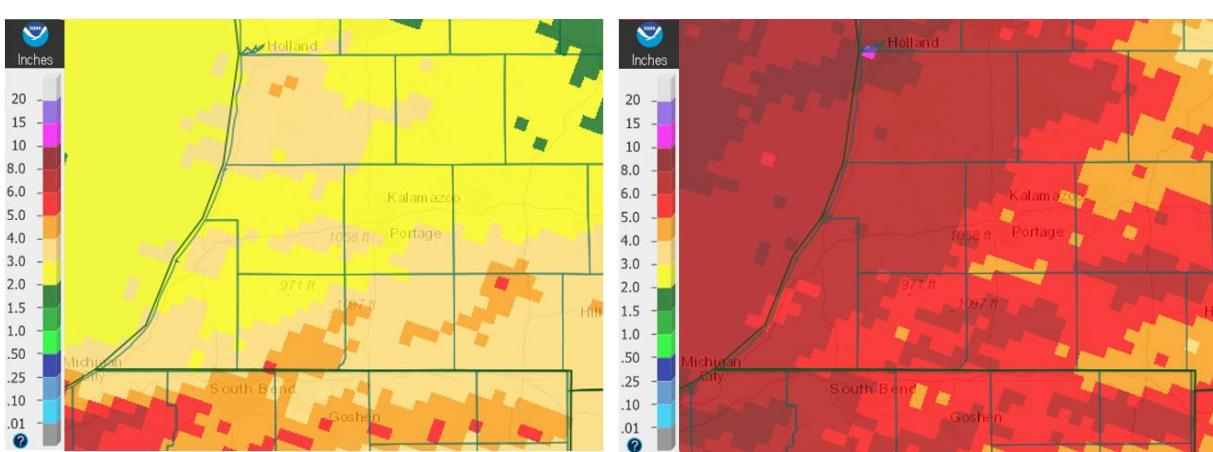
The latest version of the drought monitor is not much improved over last month; however, it does not include rainfall from this past week. Also as predicted, rainfall totals were significantly higher than normal with 1.5 to as much as 3 times the normal amount for the month. With soybean nearing or already at R7 and corn reaching black layer in most fields in the area by mid-month, the need for irrigation will be winding down. If rain keeps you out of the field for a couple of days and your harvesting equipment is ready to go, consider making an [end-of-season repair list](#) for your irrigation equipment.



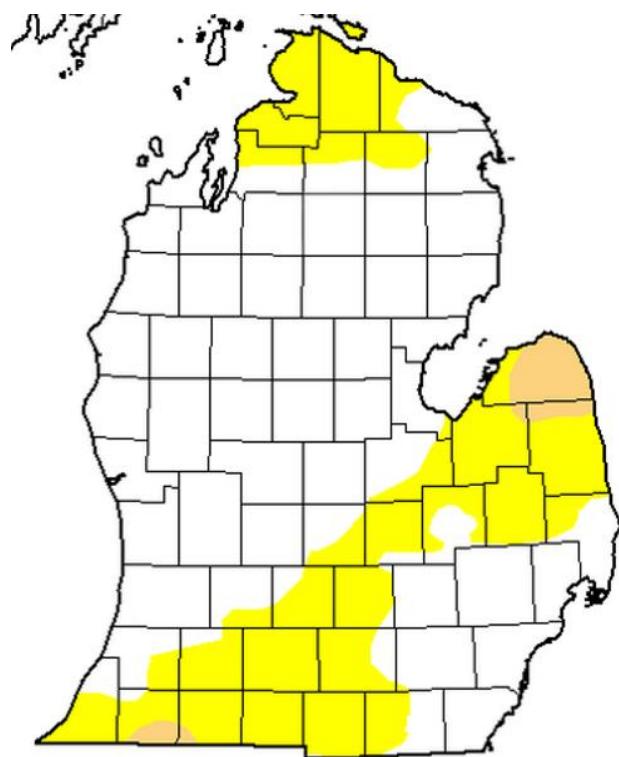
Accumulated growing degree day comparison for the month of September between 2019 and the 5-year average for several Enviroweather sites in south central and southwest Michigan.



Rainfall comparison for the month of September between 2019 and the 5-year average for several Enviroweather sites in south central and southwest Michigan.



Rainfall totals for the past 7 days (left) and past 30 days (right) as of September 30<sup>th</sup>.



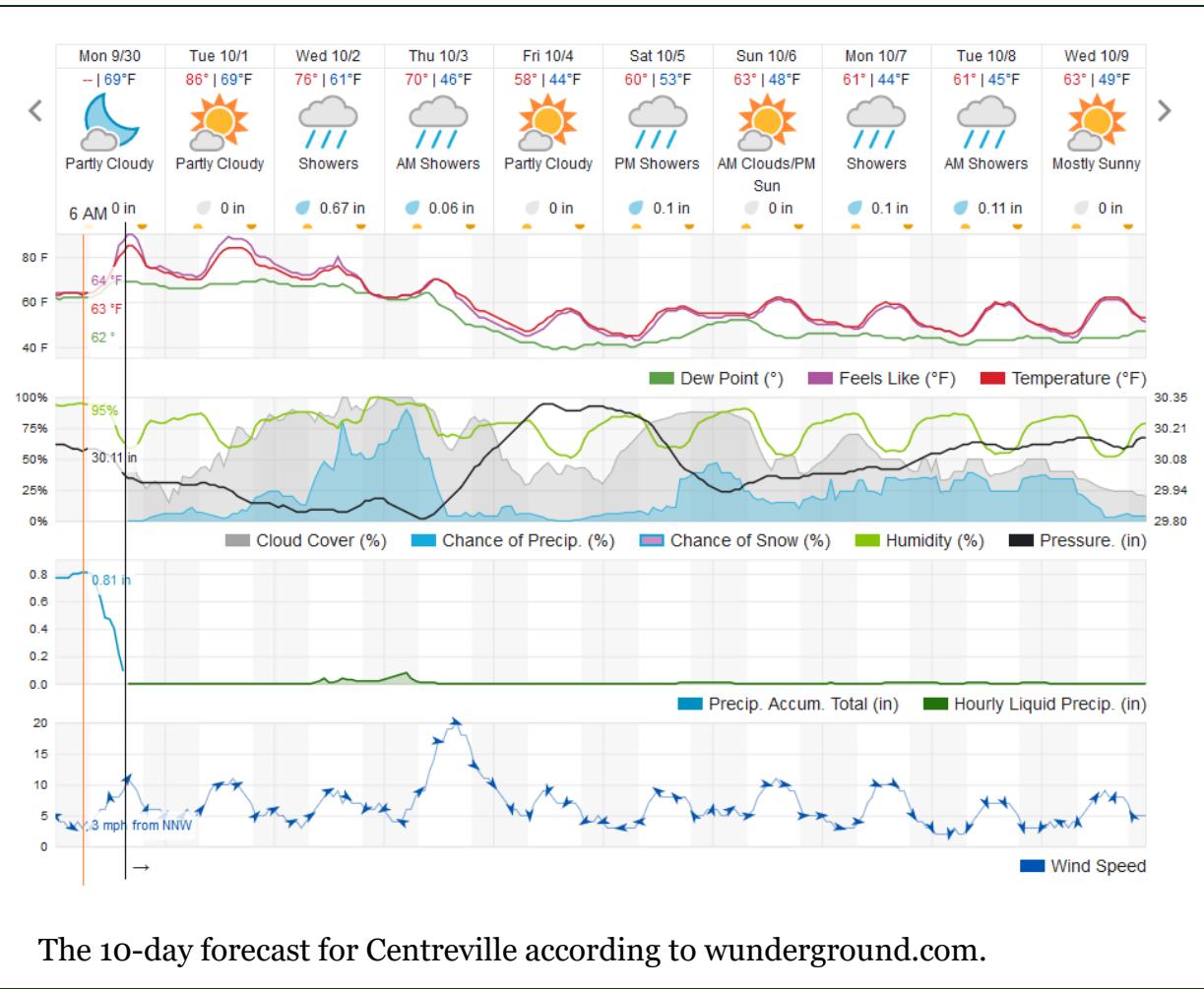
**Map released: Thurs. September 26, 2019**

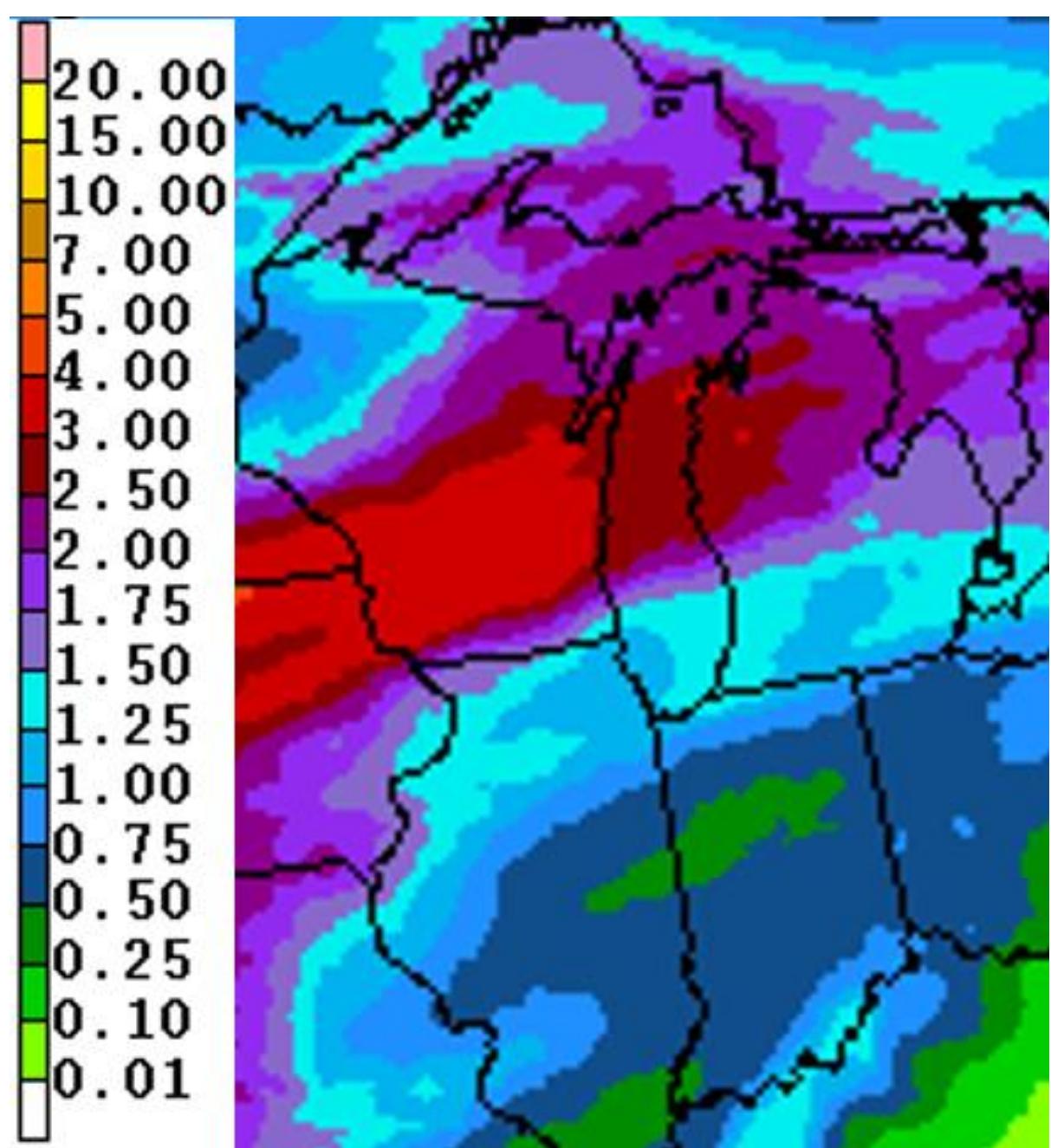
**Data valid: September 24, 2019 at 8 a.m. EDT**

**Intensity:**

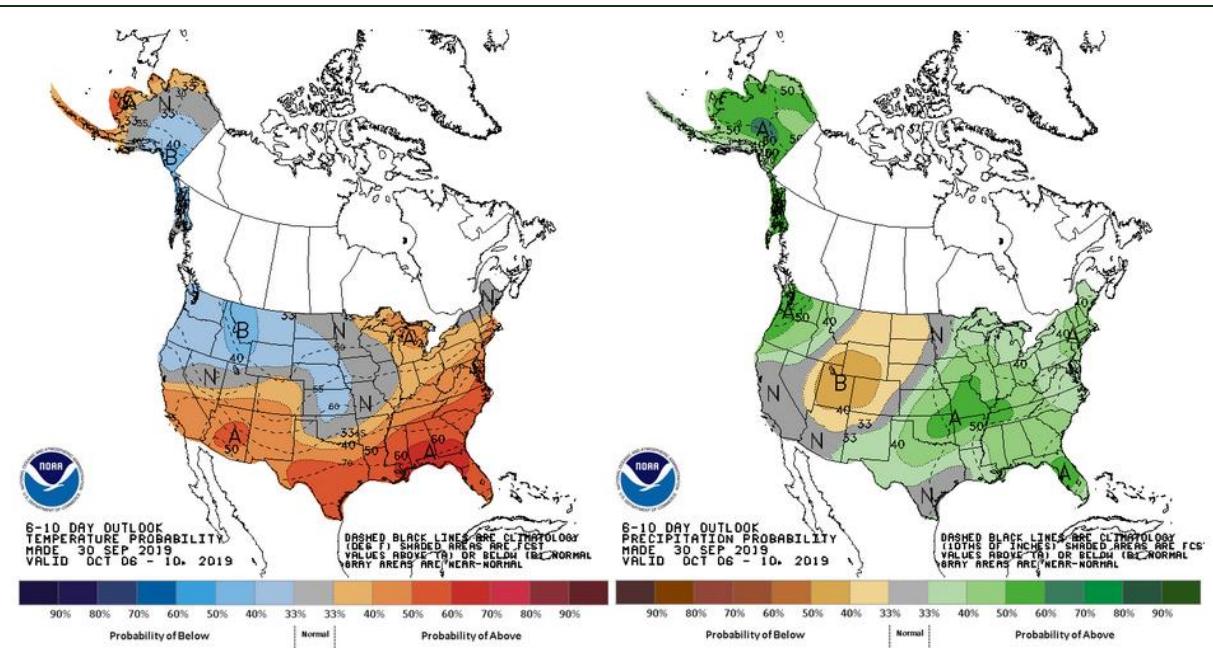
- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

The latest version of the drought monitor shows that not much has improved in Michigan this past month.





Forecast for precipitation totals for the week ending Oct. 7, 2019.



National Weather Service 8-14 day outlook (Oct. 6-10) for temperature (left) and precipitation (right)—the 6-10 day outlook is essentially the same. The October outlook overall predicts warmer and wetter than normal conditions.

## Calendar

Titles are clickable links to online content when highlighted and underlined

**Oct 19** **Household Hazardous Waste and Recycling Event.** 8am-12pm, St. Joseph County Fairgrounds, Centreville. Electronics, tires, paper, latex paint, and appliances will be accepted from St. Joseph County residents only. Call 269-467-5617 with questions.

**Oct 22** **Public Comment on GAAMPS.** 9am, MDARD's Geagley Laboratory, 1615 S. Harrison Rd., East Lansing, MI. Public comments will be accepted on all the GAAMPs. Written comments may be submitted to MDARD's Environmental Stewardship Division, and must be postmarked no later than October 22. Comments also may be emailed to [MDARD-rtf@michigan.gov](mailto:MDARD-rtf@michigan.gov) by no later than 5:00 p.m. on October 22.

**Dec 13** **RUP Core Training and Testing.** 8:30am-12pm. St. Joseph County MSU Extension Office, 612 E. Main St., Centreville, MI. A review of the Core Pesticide Applicators Manual to prepare for the MDARD Pesticide Applicators Certification Exam. Call the Extension office (269-467-5511) to reserve your seat. Cost is \$20/person. Those taking the exam will need to sign up on [MDARD's website](#) and bring a separate check.

**Dec 13** **Michiana Irrigation Association Annual Meeting.** 9am-3:30pm. Blue Gate Garden Inn, Shipshewana, IN. Stay tuned for details.

**Dec 18** **2019 Integrated Crop and Pest Management Update.** 9am-4pm. MSU Pavilion, 4301 Farm Lane, Lansing, MI. Michigan agribusiness, pesticide sales and service professionals, crop consultants, and farmers. Cost is \$60/person (includes refreshments, lunch and handouts including the 2020 MSU Weed Control Guide and other bulletins). Register online by Dec. 16.

**Jan 10-11** **Midwest iHemp Expo.** Lansing, MI. Sponsored by iHempMichigan. MSU specialists and educators working on industrial hemp will present 2019 research findings.

**Jan 13-15** **MABA Winter Conference.** Lansing Center, Lansing, MI.

**Jan 22** **SMaRT Annual Review.** Three Rivers or Sturgis, MI. 8:45am-12:30pm. The Michigan Soybean Checkoff program is covering all costs, but online pre-registration is requested to ensure an accurate count for lunch and materials. Contact Mike Staton (staton@anr.msu.edu, 269-673-0370, ext. 2562) with questions.

**Jan 29-30** **Great Lakes Crop Summit.** Soaring Eagle Casino, Mt. Pleasant, MI.

**Jan 31** **Ag Action Day.** Kalamazoo, MI.

## MSU Extension Digest Briefs

### Register for 2019 Integrated Crop and Pest Management Update

Published on September 26, 2019

The Integrated Crop and Pest Management Update for Agribusiness on Dec. 18 will offer seven MDARD restricted use pesticide, six CCA and one MAEAP phase 1 certification credits.

### Michigan Hay Listing Network to expand outreach and include other forages

Published on September 26, 2019

Corn silage is a forage too! Producers looking for options to market other forage crops including corn silage are encouraged to use the Michigan Hay Listing Network.

### Farmers invited to submit corn silage samples for mycotoxin study

Published on September 24, 2019

Mycotoxins in corn have long been a bane as well as a mystery. A new research project aims to reduce this mystery and enable farmers to reduce their risk. This season, farmers can submit samples of corn silage for free mycotoxin analysis.

**MSU Plant & Pest Diagnostics gets a brand-new website**

Published on September 24, 2019

We invite you to explore our new website to learn about new services and reconnect with our diagnosticians.

**MSU Extension Breakfast on the Farm organizers are seeking host farms for 2020**

Published on September 20, 2019

Since 2009, forty Breakfast on the Farm events have been held in Michigan. After a one year break, Michigan State University Extension is once again looking for host farm families.

**Preparing winter wheat in the autumn for greater yield next summer**

Published on September 19, 2019

Considering autumn fertilizer management now may strengthen winter wheat yield potential.

**Predicting when Michigan soybean fields will reach physiological maturity**

Published on September 19, 2019

A new tool called SoyWater can help predict when soybean fields will reach physiological maturity, or the R7 growth stage.

**2018 Farm Financial Benchmarking Results from MSU-Extension Telfarm Program**

Published on September 18, 2019

A financial analysis of your farm can be very helpful especially during a time such as recent years when farming economy has taken a hit.

**Handling frost-damaged soybeans**

Published on September 17, 2019

Soybean producers can try these recommendations to reduce adverse effects of an early frost.

**Camera or drone video can help identify center pivot sprinkler repairs**

Published on September 13, 2019

Before you put the pivot away for the season, use a camera or drone video of pivot water patterns and pipe leaks to greatly help winter irrigation repairs.

**Check fields for tar spot if your later-planted corn is turning every color except green**

Published on September 13, 2019

Corn tar spot symptoms are becoming more widespread across southwest Michigan.

**Management guidelines for immature and frosted corn silage**

Published on September 12, 2019

Management adjustments are needed when harvest maturity is not ideal.

**Late-planted crops may need irrigation into October**

Published on September 12, 2019

Avoiding late-planted crop drought stress may mean irrigating until October of 2019.

**Planting wheat on prevented planted ground**

Published on September 12, 2019

Points to consider when planting wheat into prevented plant acres this fall.

**MSU seeks farmer input on wildlife damage to crops**

Published on September 10, 2019

Researchers at Michigan State University are looking to identify wildlife management priorities for agriculture.

**Cover crop recipes: Post soybean, use cereal rye**

Published on September 10, 2019

The following recipe provides an introductory approach to integrating cover crops into soybean rotation going to corn.

**Harvesting soybeans for forage**

Published on September 5, 2019

Some producers may want to harvest soybeans for forage this year. Here is essential information for producing high quality soybean forage.

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