

Southwest Michigan Field Crops Updates June 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.

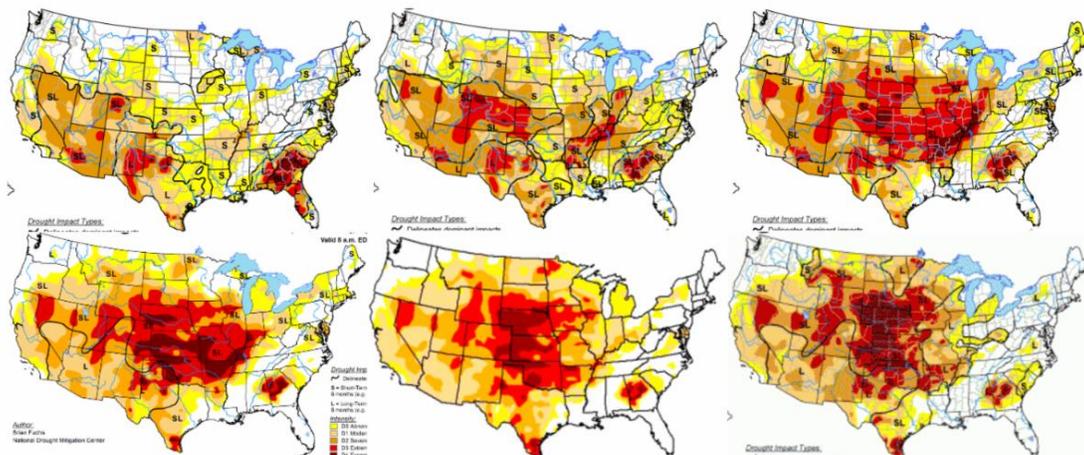
Worse than 2012?

Comparing weather extremes with past events is a fun pastime. That’s where we get stories like, “I caught a 10 lb trout in the back field at Grandpa’s Farm,” or for this spring’s weather, “I saw a caravan of camels crossing my field yesterday...they were packing water bottles” or “I went to the hardware to buy a fishing shovel...to dig them out of the sand—now I’m looking at getting an excavator ‘cause the fish are too deep.”

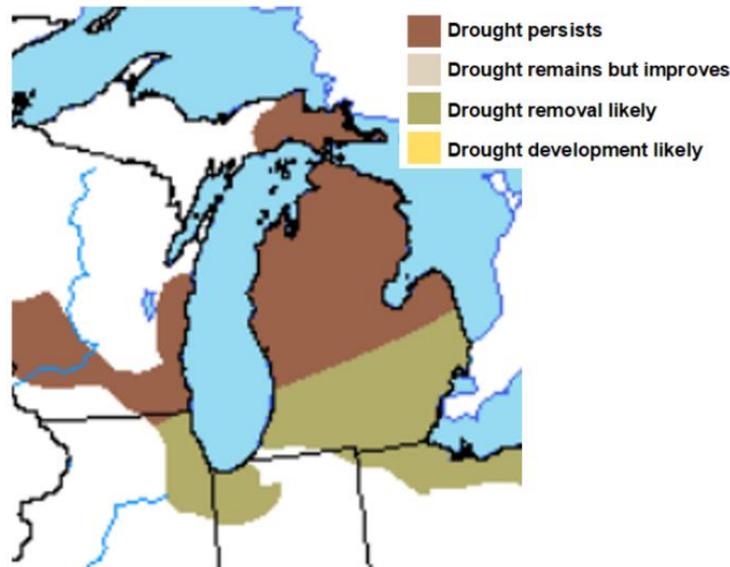
Of course, the granddaddy of drought stories in recent memory will come from 2012. But many folks are wondering how dry conditions this spring compare with that year, and whether these conditions could lead to another similar drought. I took the liberty of pulling historic US Drought Monitor images from May through October of 2012 to remind you of what things looked like that year in Michigan. I was still in Illinois that year, and we had it much worse than you all did up here, but as you can see from the maps, things were already pretty dry here even in June with July being the driest. As bad as the drought was, it was relatively short-lived compared with ones that our friends out west have been battling for several years.

Fast forward to the present (see the current version of the map found in the weather and crop section below). At first glance, it appears that the dry conditions this spring appear to be about as bad as they were in July 2012. On a national scale, the 2012 drought covered a large percentage of the Midwest, but it started off quietly that spring. Similar to 2012, rainfall has been below-normal from last fall through this spring. The U.S. Monthly Drought Outlook for May (released April 30) predicted improving conditions in southern Michigan; however, that has not proven to be the case yet. As planting season comes to an end, I will keep my eyes on the drought situation and what management changes will need to be made moving forward, especially for those who are not set up to irrigate.

Side note: Lyndon Kelley, Dennis Pennington and Bruce MacKellar worked on refreshing an article on wheat irrigation considerations—[Considerations for raising irrigated wheat](#)—that will be useful for those who are growing wheat this year.



U.S. Drought Monitor maps from the end of May (upper left) to October (lower right), 2012.



The U.S. Monthly Drought Outlook for May (released April 30).

IPM and Invasive Pest Papers

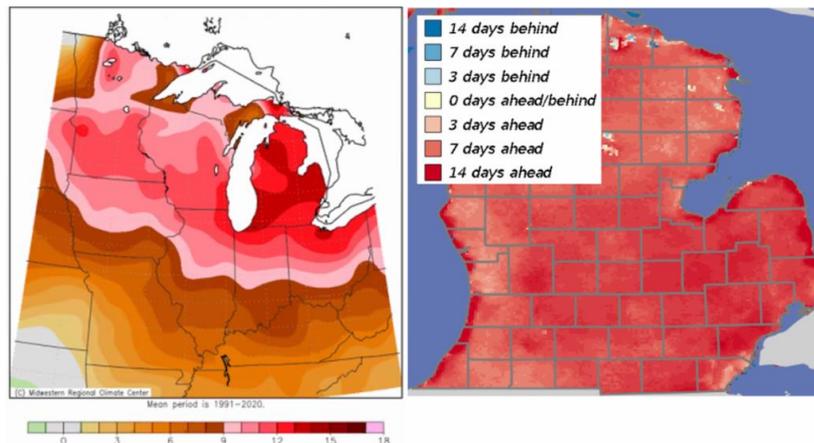
The [National Integrated Pest Management Coordinating Committee](#) has released the following series of papers on IPM and invasive pests. These nicely summarize stats related to IPM, invasive pests, and pesticide resistance.

- [US Agriculture is Vulnerable to Weeds, Diseases, Insects, and Other Pest Threats](#) (Full-text, April 2021)
- [US Agriculture is Vulnerable](#) (One-Pager)
- [The Growing Threat of Pests Resistant to Pesticides and Other Management Tactics](#) (Full-text, April 2021)
- [The Growing Threat](#) (One-Pager)
- [Invasive Pests: A \\$120 Billion-a-Year Threat to America's Farms and Lands](#) (Full-text, April 2021)
- [Invasive Pests](#) (One-Pager)

Weather and Crop/Pest Update

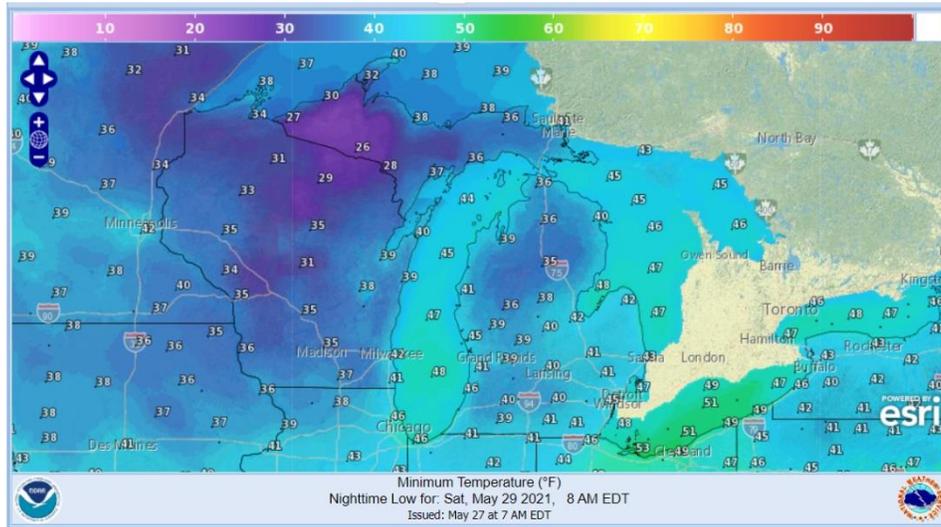
Weather

May has been an interesting month with temperatures 12+ degrees below normal during the first week to 12+ degrees above normal this past week. Growing degree days are now tracking above normal again by about a week, and that should remain the same over the coming week. A Canadian-origin high pressure system will be associated with the cold front coming through Michigan over the next couple of days with possible frost further north in the state on Saturday morning but not likely in our area. Temperatures will moderate over the weekend and return to normal by Memorial Day.



Average temperature departure from normal for May 19-25 (left) and growing degree day (base 50) comparison with normal from March 1 through May 26 (right).

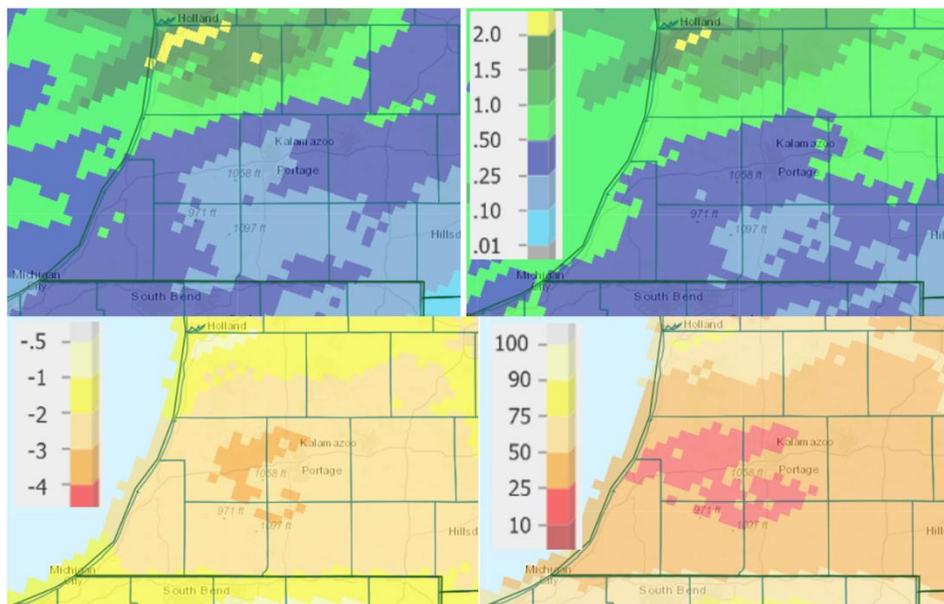
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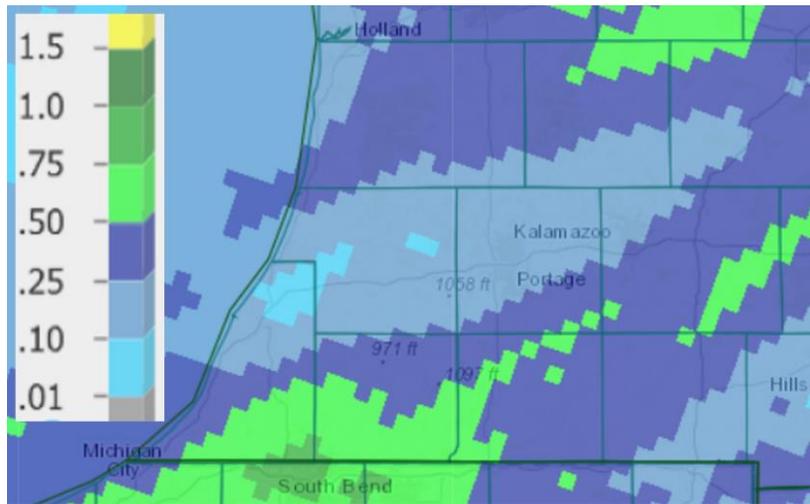
Minimum temperatures Saturday morning as a result of a Canadian-origin high pressure system.

The main story continues to be precipitation, or the lack of it. According to the May 24 USDA Crop Report, 62% of the state is short to very short in topsoil moisture, and the high temperatures and breezy conditions this past week strengthened that. Though we did pick up 0.4 inches of rain on average across south central and southwest Michigan earlier this week (higher amounts closer to Grand Rapids), most areas have received 10-50 percent of normal rainfall over the past month. As an example of the dry trend, MSU agriculture climatologist Jeff Andresen has calculated the accumulated precipitation in Coldwater as of May 16—we were very close to setting records for low precipitation, let's see how rains this week affect this. The current version of the US Drought Monitor is largely unchanged from last week, although Jeff tells us there is a considerable lag with regards to taking rainfall into consideration, so it will be interesting to see next week's assessment. Aside from a brief time in August 2018, this is the first time since 2012 that we have seen D2 Drought conditions here in Michigan.

With below-normal to normal temperatures this coming week, the weekly forecasted reference evapotranspiration (FRET) is just under 1.2 inches for the region. The precipitation forecast for the coming week is favorable, and most areas in the region should receive between 0.75 and 2.0 inches, essentially all that falling Thursday night to Saturday morning with little chance of rain again until late next week. The 8-14 day outlook calls for above-normal temperatures and, though the current prediction is for slight chances of above-normal precipitation, Dr. Andresen suggests we take that with a grain of salt in this case.



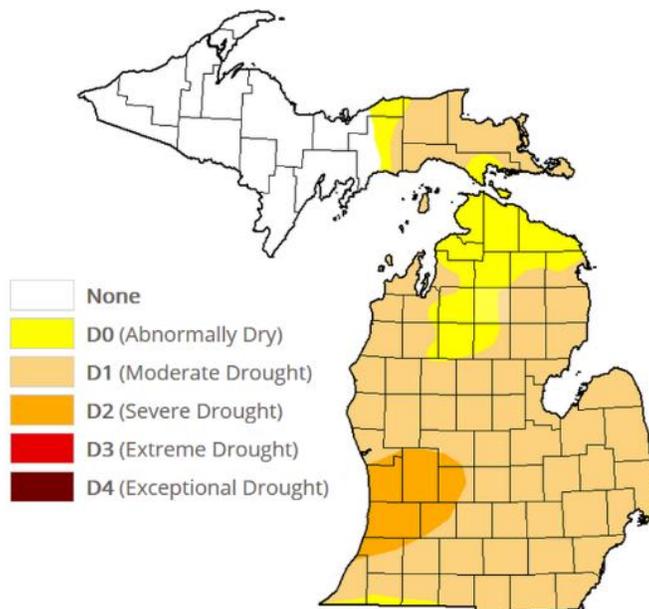
Precipitation totals for the past 7 days (upper left) and the last 14 days (upper right) as of May 27. Precipitation departure from normal (lower left) and percentage of normal (lower right) for the past 30 days.



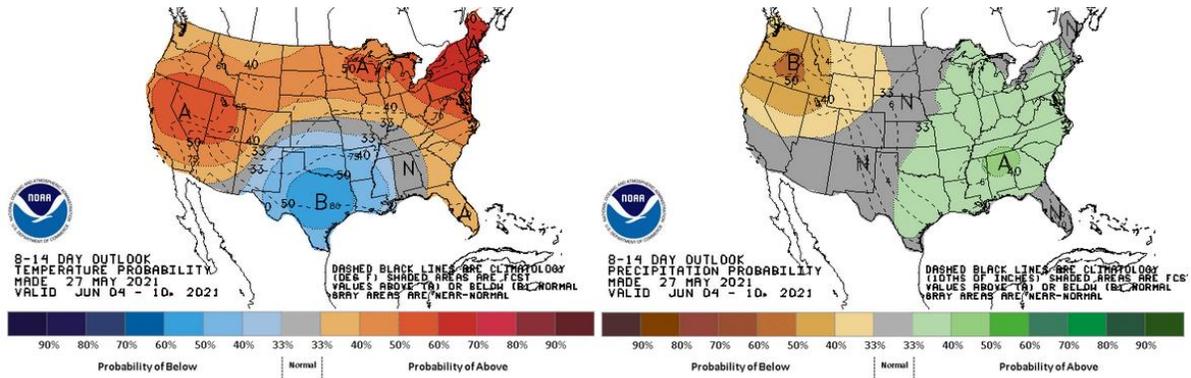
One-day rainfall totals as of 8am Friday, May 28. I had 0.85 inches in the rain gauge in southeast Kalamazoo County.



Accumulated precipitation in Coldwater as of May 16. Graphic courtesy of Jeff Andresen.



The U.S. Drought Monitor released May 27, 2021.



The 8-14 day outlook (June 4-10) for temperature (left) and precipitation (right).

Crops and Pests

Wheat was at the heading stage (Feekes 10.5, head fully emerged) in our area earlier this week, although one field visited had already begun flowering (10.5.1) by Monday. The yellow flowers will begin to appear in the middle of the head and progress upward and then down toward the base. This stage begins the optimum time for a fungicide application for head scab (a.k.a. Fusarium head blight) if warranted. The risk for head scab is currently low for southern Michigan, even for susceptible varieties. MSU field crops pathologist Marty Chilvers says that if you have never had an issue with head scab in your fields with a given variety, you should be OK not making the fungicide application at flowering this year. However, if the risk level increases over the next 1-2 weeks, or if you have switched to a variety this year that is more susceptible than you have used in previous years, or if you typically spray for foliar diseases that can be controlled with an application at flowering, then he would recommend making that application.



Wheat at beginning flowering (Feekes 10.5.1) in St. Joseph County on May 24. Photo courtesy of Eric Anderson.



Risk of Fusarium head blight (FHB, or head scab) on a highly susceptible wheat variety for the 72-hour forecast as of May 28 according to the [Fusarium Risk Tool](#). All of Michigan is rated low risk for varieties that are ranked as susceptible or better.

Alfalfa is currently in the early- to mid-bud stage and some fields have been harvested already. With the cool period in mid-April and again in early May, growth slowed to where we are closer to average with regards to expected first cutting. This is assuming that alfalfa weevil feeding has not reached threshold. MSU field crop entomologist Chris DiFonzo said she had not seen a field over threshold (40% of stems with feeding) as of late last week.



Alfalfa at early bud stage. Photo courtesy of Eric Anderson.

Corn planting progress continues to be well ahead of the average, according to the May 24 USDA Crop Progress report, with 88% of the corn crop in Michigan planted—20% ahead of last year and 30% ahead of the 5-year average. **Soybean** was 82% planted—18% ahead of last year and 42% ahead of the 5-year average. Corn was 53% emerged and soybean 41%. Early-planted corn has reached V3-4 and stands look healthy. The first trifoliate leaves are out in soybean (V1) and only minor, sporadic feeding has been seen thus far in fields scouted. As Purdue’s entomologist John Obermeyer stated in [recent comments about bean leaf beetle](#), “these overwintering beetles are naturally dying off, as they have already done their mating and egg laying.....the few beetles remaining in

this field will be gone within days.” MSU soybean educator Mike Staton has visited fields with significant stand issues due to seed corn maggot. If you notice areas in a field with unexpected emergence issues, dig up several seeds to look for mushy seeds, white maggots, and penetration holes in the seed.



Soybean nearing V1 on May 24 in a field planted on April 19 (left) and minor bean leaf beetle feeding in the same field (right).

True armyworm (TAW) and **black cutworm (BCW)** moth captures continue to be low, although one TAW trap had 14 in Kalamazoo County and one BCW trap had 10 in St. Joseph County this past week. Reports from other parts of the state mirror what we are seeing down here. No BCW damage has been seen yet in our region—contact us if you find any issues.

Potato leaf hopper (PLH) has been spotted in the state already. Jeff Andresen says that the weather system earlier this week with high southerly winds was likely an insect transporter. Hopefully they will not arrive before first cutting of alfalfa has wrapped up, but we will be monitoring this pest as the season progresses.

Weeds. With limited rainfall since mid-April, and especially in the last two weeks, there are concerns about the efficacy of PRE herbicides that have been applied. These herbicides (e.g. Dual, Prowl, Harness) require incorporation with light tillage or water in order to get to the weed seedling root zone to be effective. Generally a 0.5-0.75 inch rainfall or irrigation event would be ideal but even 0.25 inch would help. For those not able to irrigate to water in the PRE, vigilant scouting is recommended early on, and early POST applications may be needed. If PRE applications were made this week, they should be sufficiently “activated” with rainfall.

Fast Fonz Facts (in case you are not subscribed to Dr. Chris DiFonzo’s FFF, here is a portion of the one she sent out on 5/21)

- 1) **Seedcorn maggot on soybean:** Seedcorn maggot (SCM) feeding on soybean is common, showing up as scars on the cotyledons. Plants typically grow out of the damage and when if a few plants are lost, the nearby plants make up for them. However, this spring there are reports of soybean fields in southern Michigan with significant stand loss from SCM. Purdue also reports damage in Indiana. This level of stand loss in soy is unusual, but it’s not a surprise given the recent trend to plant beans earlier and earlier, into cooler soils and closer in time to tillage or burn down operations. Early planting exposes soybeans to a riskier time in the SCM life cycle, and the larvae from such infestations are happy to attack germinating corn, soybean, vegetables, and many other crops.

SCMs overwinter as pupae in the soil. Flies emerge early, typically in mid-April. In fact, the degree day model for SCM is based on accumulating degree days from Jan 1st based on a chilly 39F. Peak flight and egg laying, meaning an estimated 50% of flies have emerged, occurs at 355 DDs. Flies lay eggs in fields with freshly decaying stuff, including manure, a recently-killed cover crop, rotting potatoes, or even weeds which were tilled under. Heck, one entomologist actually spreads dog food over plots to attract flies. Once the maggot start feeding, damage is worse under cool soil conditions, because the vulnerable below-ground growth is exposed to attack for a longer time. The standard recommendation is to wait at least 2 weeks after spreading manure or working green material into the soil before planting, to reduce attractiveness of the field to flies. This extra time also shifts planting into warmer soils so plants emerge faster. By following this advice, maggot damage on soybean can be avoided entirely or limited to a bit of scraping on the cotyledons. Avoiding SCM this way also eliminates a reason to use a neonicotinoid seed treatment on soybean. This is a cost saving, plus an IPM benefit. Using neonics year after year increases the chance of insect resistance, and harms beneficial insects (particularly the ground beetles that eat slugs). You don’t have a choice about getting a neonic on corn, but you do have a choice when you rotate a field to soy. And here is a final secret: neonic seed treatments are sketchy on SCM in the first place! Seed treated fields suffer damage too, when maggot populations are high. And a neonic is NOT recommended when a heavily damaged fields gets replanted, because the fly risk is past.

Here is the situation reported from one farm in Allegan County this week. A weedy field was tilled, then planted on April 16. This field is apparently a near-total loss from SCM. Why? As the green weeds decayed in the soil, female flies were attracted to lay eggs. How do I know that females were there? Because the handy calculator on the MSU EnviroWeather website predicted they were present in mid-April [<https://enviroweather.msu.edu/commodity.php?commodity=fieldcrops&stn=msu>, click on the CORN and “Seedcorn maggot” tabs]. I searched the prediction for Allegan Co. The output is attached. Peak adult emergence and egg laying (meaning roughly 50%) was around April 8, with another 50% left after that date. Thus flies were active in mid-April at the time of tillage and planting. Ideally, if planting had been delayed for two weeks until at least May 1, there would have been no or low damage. At that point, the field would no longer have attracted egg laying flies. And the soil temps would have been a bit warmer. And May 1 was still well within the optimal planting window in lower and central Michigan; yield does not begin to drop off until planting dates in late May. An interesting side bar to this story is that the farmer’s other soy fields were no-till planted in mid-April too, but they did not suffer stand loss. The farmer did not work green decaying matter into the soil of those fields, so they simply weren’t that interesting to the female flies. So from my entomology perspective: Check the SCM model for your area in April. Plant soybeans at a reasonable time, two weeks after decaying schmutz is gone and the soil is a bit warmer. Don’t rely on a neonicotinoid seed treatment to protect against maggot feeding; in fact, you probably don’t need a neonicotinoid on soybean in the first place.

- 2) Update on **moth flights**: The Great Lakes and Maritimes Pest Monitoring Network of pheromone traps is online with data from Michigan and neighboring northern states and provinces. Below is the direct link to the trap network. To access moth captures, click on the tabs BCW (cutworm) or TAW (armyworm). The trap captures advance week by week, starting from April. A dot shows a trap location. The dots expand as trap captures increases.

<https://ontariocal11.maps.arcgis.com/apps/MapSeries/index.html?appid=4f19db5a8c3547f397825be8a07e80fa>

Virtually no **armyworm** has been captured yet in MICH or on the rest of the network, but MSU meteorologist Jeff Andresen indicates that an ‘insect transport event’ with winds from the south may take place this weekend (May 22/23). For comparison, by June 19 last year, we already had wheat fields with damaging levels of armyworm. **Black cutworm** flights have been detected across the network, especially during the week of May 1-8. As I sampled fields in southern MICH this week, it was common to find black cutworms under chickweed. The caterpillars were 1 ¼ to 1 ½ inches, likely 5th instars, with at least another instar of development left to go. When scouting corn fields, look for gaps in stand or cut plants, and check around the base for larvae. Target fields that had a cover crop or heavy weed pressure early, and non-Bt fields since most Lep Bts provide some control of cutworm. Threshold, more than 5% plants cut or damaged.

- 3) **Alfalfa weevil larvae** are feeding in fields now. Damage can appear seemingly overnight because, as typical of many insects, the biggest larvae are voracious teenagers that are responsible for most of the damage. It is important to avoid spraying if possible, because there are multiple parasitoids that attack the larvae for free. If you are within a week or two of cutting, early-cutting is always your first choice for control to preserve our beneficials. For mixed stands of alfalfa and grass, cutting is also the first choice.

Calendar

Titles are clickable links to online content when highlighted and underlined

June 3

- [Field Crops Virtual Breakfast](#), 7-8am. Better Irrigation Management Through Monitoring and Scheduling with Lyndon Kelley and Younsuk Dong. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.

June 9

- [Michigan Wheat Virtual Field Day](#), 8-10am. Organic Field Crop Production with Vicki Morrone. Two RUP and CCA credits available. No cost to you, register online.

June 10

- [Field Crops Virtual Breakfast](#), 7-8am. Organic Field Crop Production with Vicki Morrone. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.

June 17

- [Field Crops Virtual Breakfast](#), 7-8am. TBD. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.

June 24

- [Field Crops Virtual Breakfast](#), 7-8am. Sugar Beet Cercospora – BeetCast with Jaime Willbur. One RUP and one CCA credit available for each live session. No cost to you, register online once for whole season.
- [Carbon Markets for U.S. Row Crop Producers](#), 12:30pm. Purdue ag economists Carson Reeling, Nathanael Thompson and James Mintert will discuss the opportunities and challenges of the carbon markets in U.S. agriculture for row crop producers. Cost is free, register online for access to live webinar and recording.

June 30

- **Pesticide Applicator License Extension Deadline.** Pesticide applicators with expired licenses in 2019 and 2020 must renew by this date to maintain credentials.
- **MSU Weed Tour.** MSU Agronomy Farm, 4450 Beaumont Rd., Lansing. Check-in 8:30am, tour 9:30-11:30 and concludes with lunch. Cost is \$30, includes tour booklet and boxed lunch All activities will be conducted outside. Pre-registration is required and will close on June 27.

July 12&13

- **Large Truck and Tractor Tire Collections.** 9am-12pm (12th) and 4-7pm (13th). 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, Emilly Hickmott, by phone or email with more details closer to the event. You can also email her at resourcerecovery@vanburencd.org with any questions.

MSU Extension Digest Briefs

PUBLISHED ON MAY 27, 2021

- **REGISTRATION DETAILS FOR THE 2021 MSU WEED TOUR ON JUNE 30** - Come join us to view the latest in corn and soybean weed control research.
- **EARLY IRRIGATION TOPIC FOR JUNE 3 FIELD CROPS VIRTUAL BREAKFAST** - The Field Crops Virtual Breakfast on June 3 will feature MSU irrigation specialists Younsuk Dong and Lyndon Kelly discussing early irrigation strategies.

PUBLISHED ON MAY 26, 2021

- **DRY CONDITIONS WILL IMPACT EARLY SEASON WEED CONTROL** - What do dry conditions mean for weed management?

PUBLISHED ON MAY 24, 2021

- **WHEAT WATCHERS REPORT – MAY 24, 2021** - The lack of rain has been a major concern to wheat watchers around the state.
- **CONSIDERATIONS FOR RAISING IRRIGATED WHEAT** - Irrigation scheduling recommendations and disease management guidelines for wheat.

PUBLISHED ON MAY 20, 2021

- **2021 STATUS OF HERBICIDE-RESISTANT WEEDS IN MICHIGAN** - Work continues on new herbicide resistance cases in waterhemp and fall panicum.
- **DELAYED AND VARIABLE SOYBEAN EMERGENCE** - Learn how to assess and respond to the delayed and variable soybean emergence caused by seed corn maggots, crusting or dry soil conditions.

PUBLISHED ON MAY 19, 2021

- **POTENTIAL SURVIVAL OF POTATO VOLUNTEERS IN MICHIGAN IN 2021** - Begin scouting for volunteer potatoes, which may serve as possible sources of late blight inoculum. Observed high risk of survival throughout the state.

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