## 

Issue: 720 June 1, 2023

## **VEGETABLE CROPS HOTLINE**

A newsletter for commercial vegetable growers prepared by the Purdue University Cooperative Extension Service.

#### In This Issue

- From the Editor's Desk
- Are You Scouting Your Potatoes? The Beetles Are Here!
- Tomato pith necrosis
- Looking for Collaborators on High Tunnel Spider Mite Project
- Tomatoes Need a Consistent Water Supply
- Diagnosing Herbicide Injury is Easy... Sometimes.
- Dry Conditions Continue, Drought Conditions Expected to Worsen
- 2023 OISC Clean Sweep Pesticide Disposal
- USDA Accepting Applications to Help Cover Costs of Organic Producers
- In Some Areas Irrigation is Now More Critical
- Southwest Purdue Agricultural Center Field Day \_Registration Now Open!
- Purdue Fruit and Vegetable Field Day Register Now!
- Small Farm Education Field Day Register Now!

## From the Editor's Desk

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)

Welcome to the *Vegetable Crops Hotline* (VCH), Purdue Extension's exclusive newsletter for people in the business of growing vegetables.

In this issue, we are highlighting soil moisture deficit issues, irrigation resources, Colorado Potato Beetle damage, herbicide injury identification, and disease issues. Included is lots of information about educational opportunities and news from the Indiana Office of the State Chemist and the United States Department of Agriculture.

Registration is now open for three Purdue field days. The Southwest Purdue Ag Center field day (Vincennes) on June 28, the Purdue Fruit and Vegetable field day (Meigs, Lafayette) on July 20, and the Purdue Small Farm Education field day (Purdue Student Farm, West Lafayette) on July 27. Register now to reserve your spot. Registration links are available in this issue and on the EVENTS tab of the Vegetable Crops Hotline Newsletter webpage.

Frequently we include links to websites or publications that are available online. If you can't access these resources or can't see the web address, don't hesitate to contact your local Extension office or us to request a hard copy of the information. Remember that all previous articles published in the VCH newsletter are available on the VCH website vegcropshotline.org.

#### We would like to hear from you

**ANR Educators and Growers**, reach out to us if you are experiencing a vegetable production-related issue you think other growers need to know of. Remember, we have a great Horticulture Team that can assist you. A complete list is available HERE.

Send us pictures of success stories, activities, or issues in your county or on your farm. Please include a description and provide the name of the person that needs to get credit for the picture. These pictures could be used in future *Vegetable Crops Hotline Newsletter* articles. Submit your stories HERE.

#### Enjoy reading this issue

Do not hesitate to contact me, Petrus Langenhoven, at plangenh@purdue.edu if you have any questions or suggestions to improve the newsletter.

## Are You Scouting Your Potatoes? The Beetles Are Here!

(Laura Ingwell, lingwell@purdue.edu, (765) 494-6167) & (Christopher Adair, ctadair@purdue.edu)

At the Purdue Student Farm, we are in full swing with our Colorado Potato Beetle (CPB; Figure 1) management program.



Figure 1. Colorado potato beetle adult feeding on a leaf (Photo by John Obermeyer).

On this small farm, these beetles are a consistent threat to the potato crop. This is in part due to their limited ability to rotate, as

the whole farm is smaller than the recommended rotation distance (ranging from 200 yards to a few miles). To minimize their damage, we keep a close eye on the crop. Our initial scouting is concentrated on the field edge adjacent to the previous year's production, as this is often the source of the overwintering population that marches across the farm to find the new crop. The main threat from this overwintering generation is the eggs (Figure 2) that they are going to be laying in the new crop. Scouting is focused on the underside of the leaves.



Figure 2. Colorado potato beetle eggs on the underside of a potato leaf (Photo by John Obermeyer).



Figure 3. Colorado potato beetle nymphs defoliating a potato plant (Photo by John Obermeyer).

Potatoes were planted at the Purdue Student Farm on 4/13/2023. The plants began to emerge around 5/8/2023. The first beetles were identified in the field May 11-12, and the first insecticide application was applied on May 19<sup>th</sup> as egg clusters were widespread throughout the field; hatching had begun by May 16<sup>th</sup> in a few instances. The very first few flowers began showing on 5/30/2023.

Once again, this year, we will be evaluating five different spray programs that will be utilizing a variety of organic products. The active ingredients being evaluated include spinosad, *Beauveria bassiana*, *Isaria fumurosa*, pyrethrins and azadirachtin. These products will be used in various rotations, displayed in the table below.

	App. 1	App. 2	App. 3	App. 4	App.5	App. 6
Prograi 1	<b>n</b> spinosad		B. bassiana	pyrethrin + azadirachti	B. bassiana	B. bassiana
Prograi 2	<b>n</b> spinosad		l. fumosorose	a spinosad	l. fumosorosea	l. afumosorosea

Program <sub>B.</sub> bassiana 3	Pyrethrin + azadirachti	spinosad	B. bassiana	B. bassiana
Program 4 pyrethrins	B. bassiana B. bassiana	pyrethrin + azadirachtir	pyrethrins	pyrethrins
Program/.	pyrethrin + I.	pyrethrin +	Ι.	pyrethrin +
5 fumosorosea	aazadirachtin <i>fumosorose</i>	aazadirachtir	nfumosorosea	azadirachtin

The most effective organic product has proven to be spinosad. To maintain the efficacy of this product, we are interested in identifying the best time to spray it and the best ingredients to use in rotation, if multiple applications are warranted.

So, how do we determine when to spray? Some of the products we are including in this trial have a relatively slow action time (i.e. they take time to infect the host or delay host development from one stage to the next); therefore, we want to get them out on the crop when the beetle nymphs are just hatching. Before and after flowering, potatoes can experience as much as 30% defoliation before impacting tuber development. During flowering, they cannot tolerate more than 6-8% damage.

The spinosad product acts quickly to kill the pest, and therefore, applications can be made close to the threshold. However, the azadirachtin, *Isaria* and *Beauveria* take time so applications will be made weekly as long as larvae are present within those treatments.

There is a second flush (generation) of adults that will appear at/after flowering. We will continue scouting and make applications when the eggs from that generation begin to hatch. Control of the adults themselves is difficult with any of these products.

As the potato plants dry down, the beetle population may spill over into other solanaceous crops, often eggplant. While we have observed adults feeding on eggplant, we rarely see eggs and larvae on crops other than potato. Management of this second generation is not as important in terms of crop yield because most of the tuber development has been completed. However, this is the generation that will overwinter and impact the following year's crop. Therefore, reducing this population will make control next year easier, so don't let them go unchecked!

Below is an outline of potato production at the Purdue Student Farm.

- 1. Work the ground early in the season, usually in March, to terminate the overwintering cover crop.
- 2. Work the ground a second time to help incorporate dead plant material a couple of days before planting.
- 3. Cut seed potato into roughly golf ball-sized pieces and let sit overnight to heal over where the potato was cut.
- 4. The following day we use our Middle Buster (trencher) to make 8–10-inch-deep trenches.
  - Our potato block is 68 ft x 100 ft, which allows space to make 14–100 ft rows and keeps plenty of space between rows to allow hilling.
- When the trenches are ready, we drop our potato pieces every 12 inches along with the granular fertilizer Sustane 8-2-4. We then cover it using a rake, then we wait!
- 3. Once the potatoes have started growing and they poke

through the soil surface, we will weed through the rows focusing on larger weeds but especially Canada thistle and any cover crop that might have survived the tilling (rye will sometimes survive if it rains enough between the two cultivations).

- 4. When potato plants are around 12 inches above-ground, we will hill them using an adjustable disc bedder.
  - Before chilling, we will apply the second and final application of Sustane 8-2-4.
  - When hilling, we prefer to have a little bit of plant showing above ground but have found if buried completely, that it will not cause any issues for the plant.
  - The hilling will also bury any smaller weeds that are in the row.
- 2. Once the potatoes have grown again and are another 6+ inches above the ground, we will hill a second time.
  - We will potentially then hill a third time a week or so later, but that is mostly to deal with any new weed emergence.
- 2. Once potatoes have flowered, they will begin to die back in the field, and we mostly leave the block alone at that point. We only focus on weeding out any Canada thistle that is around.
- 3. After the plants have died back completely, we will let the potatoes sit in the ground for a week or two letting them develop a thicker skin before harvesting.
- 4. When we are ready to harvest, we get the middle buster out and run it as low as possible under the hills, which flips the soil over, revealing most of the potatoes.
  - We will go through the soil with forks breaking up chunks, and look for potatoes that have not been turned over.
- Once harvested into bins, we store the potatoes unwashed in the closet of our wash pack and pull bins out to wash as we need them for our CSA program.

Contact Chris Adair (ctadair@purdue.edu), Purdue Student Farm Manager, if you have questions about potato production.

## Tomato pith necrosis

(Dan Egel, egel@purdue.edu, (812) 886-0198)

Tomato pith necrosis is a bacterial disease of tomatoes that occurs sporadically, usually in greenhouses or high tunnels. While this disease can kill or at least ruin marketable yield on tomatoes, the disease usually affects perhaps only a handful of plants in a greenhouse. That is, the disease does not seem to spread beyond the initial affected plants.

The first symptoms one might observe of pith necrosis are the dark and twisted stems (Figure 1). These symptoms may become sufficiently severe to cause the wilting and collapse of the plant. Leaves may turn chlorotic as a result of infection. When the stems are cut open, a dark necrosis may be observed. Continued infection of the stem may rot away much of the tissue resulting only a chambered pith remaining (Figure 2). Affected plants are not necessarily next to each other. Before the stems become twisted, one may observe dark, irregular stains on the outside of the stems (Figure 3).



Figure 1. Withered stem due to tomato pith necrosis.



Figure 2. Dark necrosis on stem and chambered pith caused by tomato pith necrosis.



Figure 3. Initial symptoms of pith necrosis of tomato may appear to be minor necrosis on the stem.

Pith necrosis is caused by a bacterium. In the lab, I can readily observe the bacteria when I cut open discolored skins of the stem and place them under a microscope.

Because the plant has a discoloration in the stem, it is sometimes confused with bacterial canker, a much more serious disease.

It is not clear how pith necrosis spreads or enters the tomato plant, but it is probably best to remove affected plants and avoid using pruning equipment on diseased plants. When removing diseased plants, it is always best to leave as little of the plant behind as possible. A landscape cloth covering can help to keep crop residue out of the soil. Remove the plants well away from the production area.

Perhaps since pith necrosis is not economically important and does not appear to spread quickly, not much is listed for the management guidelines. To manage tomato pith necrosis, avoid low night temperatures and excessive nitrogen levels; reduce high humidity in the greenhouse or high tunnel. General pest management guidelines can be found in the Midwest Vegetable Production Guide for Commercial Growers 2023 (mwveguide.org).

Tomato pith necrosis is not usually a severe disease and does not usually cause economic damage. But it is important to obtain and accurate diagnosis of this disease. Send samples to the Purdue Plant and Pest Diagnostic Laboratory or contact Dan Egel (egel@purdue.edu).

### Looking for Collaborators on High Tunnel Spider Mite Project

(Laura Ingwell, lingwell@purdue.edu, (765) 494-6167) & (Leslie Alejandra Aviles Lopez, lavilesl@purdue.edu)

Are you interested in collaborating with Purdue Entomology on the grant "Improving two-spotted spider mite management in high tunnel cucumber production" funded by North Central SARE, Sustainable Agriculture Research and Education (LNC20-438)? The primary objectives of this research are to increase our understanding of two-spotted spider mite dynamics and management in a high tunnel cucumber production system (Figures 1-2). To improve the management of the two-spotted spider mites, we have identified four different biopesticide spray programs and predatory mite species that we want to evaluate on YOUR farm. We will provide you with the products/biological control agents, mixing and application instructions, and compensation for participating.



Figure 1. Twospotted spider mite egg and adult (Photo by John Obermeyer).



Figure 2. TSSM damage on cucumber plants (Photo by Laura Ingwell).

What we need from you:

- 1. We ask that you provide detailed records of planting dates and any other crop management details (fertilizer, other pesticide, or biological control applications).
- 2. Dates of the biopesticide/predatory mite applications and the number of plants treated.
- 3. Leaf samples collected prior to the first application and periodically afterward to record the number of two-spotted spider mites or natural enemies present on the crop. Depending on your farm's location, we may ask you to collect the leaf samples and ship them to us. We will provide the supplies, including pre-labeled and postagepaid envelopes.

What you can expect from us:

- 1. All biopesticides/predatory mites will be provided by us.
- 2. Data loggers to measure temperature and humidity will be supplied and placed inside your high tunnel during your participation in the project.

- Periodic visits to your farm by researchers to discuss research progress, your concerns and to collect or help to collect leaf samples.
- An invitation to collaborate on extension objectives to determine effective ways to disseminate our research findings.
- 5. Direct support from our research team to help you make decisions regarding pest management.

Thank you for your consideration, and we look forward to working with you! Please email one of us directly if you are interested.

• Leslie Alejandra Aviles Lopez (PhD, student;

#### lavilesl@purdue.edu)

• Laura Ingwell (Principal Investigator; lingwell@purdue.edu)

### Tomatoes Need a Consistent Water Supply

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

Tomatoes need a consistent water supply when they start to bloom and set fruit. As plants grow more foliage and have more fruits set, their water needs increase. As a result, the irrigation amount must steadily increase to maintain the consistent soil water content and the water supply to the plants.

What would happen if we failed to provide plants with a consistent water supply? The most noticeable effect on tomatoes might be blossom-end rot (Figure 1). Some may argue that blossom-end rot is caused by a calcium deficiency. This is true. But usually, in soil-based production systems in our region, there is plenty of calcium present. It is a water supply issue that prevents calcium from translocating to the fruit tip and causes blossom end rot. This is a different situation compared to soilless substrate production, where applying fertilizers containing calcium is usually needed.



Figure 1. Tomato blossom-end rot (Photo by Wenjing Guan).

Generally speaking, if the soil water content is maintained consistently from fruit set throughout the season, blossom-end rot can be largely avoided. However, this is easier said than done and may need soil water content monitoring with moisture sensors.

Below is an example of the research high tunnel with tomatoes grown in sandy soil. The tomatoes were transplanted in the tunnel

on April 13, 2023. We started regular irrigation around early May. We irrigated the high tunnel daily with about 55 gallons of water in the past two weeks. We did not realize we were short watering until we saw that the soil water contents measured by moisture sensors decreased dramatically in the past seven days by around 30% (Figure 2), which raised the alarm that we needed to increase irrigation immediately.

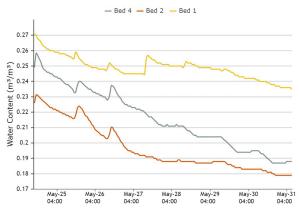


Figure 2. The decrease of soil water content at 12" depth in three beds in a tomato high tunnel in the past seven days at Southwest Purdue Ag Center. The plants were irrigated daily. Note: we can see the water content response to the irrigation event in the first three days but not after May 28.

The next question would be at what level of water depletion tomato blossom-end rot would appear. We do not have a definite answer to this question. The different types of tomatoes and cultivars vary greatly in their tendency to develop blossom end rot under water stress. For example, blossom end rot may not be an issue for cherry tomatoes, even when the plants severely suffer from water stress. In contrast, slight water stress may cause some blossom end rot on certain slicer tomato cultivars. This article described a case study showing how a susceptible cultivar developed blossom-end rot tomatoes under different levels of water stress.

Funding for the project **Improve Drip Irrigation Management for Vegetables and Melon Production in Indiana** was made possible by the Indiana State Department of Agriculture through grant A337-22-SCBG-21-003. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the ISDA.

## Diagnosing Herbicide Injury is Easy... Sometimes.

(Stephen Meyers, slmeyers@purdue.edu, (765) 496-6540)

This time of year, my email inbox and phone text messages are filled with ugly photos of fruit and vegetable crops affected by suspected herbicide exposure. Sometimes the symptomology points toward a clear cause and effect, but most of the time, the answer is not so clear-cut. Here are a couple of recent examples:

#### Cupping and discolored cabbage leaves

I recently received grower photos from a cabbage field with plants displaying cupping of new leaves and discoloration on older leaves (Figure 1). The grower believed the symptoms to be the result of a micronutrient deficiency but wanted to rule out carryover from herbicides applied in last year's corn crop. In scenarios like this one, I find that it can be helpful to look at plants from other fields or farms to draw comparisons. In some cabbage cultivars, leaf cupping is a common occurrence. In this case, I compared the grower photos with 'Tiara' cabbage grown at the Purdue Student Farm (Figure 2), which was planted into a field with no recent history of herbicide application. The leaf cupping symptoms were similar between the two fields, but the discolored older leaves were unique to the grower's cabbage. Soil and plant tissue samples from symptomatic and asymptomatic portions of the field can be used to rule out nutrient deficiency. If nutrient analyses do not reveal any clues, it is possible that herbicide carryover is playing a role in the grower-observed crop symptoms.



Figure 1. Cabbage (Photo by Oliver Book).



Figure 2. Cabbage, var. Tiara (Photo by Chris Adair).

Leaf spotting and chlorosis on strawberry and red raspberry

The pattern of crop injury is an excellent indicator of if herbicides are at fault and their source. Injury that matches the width of a spray boom suggests a potential herbicide misapplication. Strips of injury or injury at field edges can indicate overlapping herbicide applications, resulting in an excessive application rate. Injury at the start of a sprayer pass can indicate tank contamination or insufficient sprayer agitation. In the scenario below, I document a confirmed case of physical herbicide drift.

In mid-April, I noticed a neighboring farmer spraying his soybean field along our shared property line. The next day, speckled leaves appeared across my small farm. A week later, strawberry (Figure 3) and red raspberry plants (Figure 4) demonstrated chlorotic (yellow) leaves on their newest growth. When I contacted the neighboring farmer, he told me that Zidua<sup>®</sup> PRO and glyphosate were applied. Zidua<sup>®</sup> PRO is a premix of imazethapyr, saflufenacil, and pyroxasulfone. The saflufenacil resulted in the leaf spotting soon after application, but the chlorosis was the result of the glyphosate component of the tank mix. It is very common for systemic herbicides, like glyphosate, to take several days to result in symptoms of sensitive plants. Weeds growing in the field edge were highly symptomatic with gradually decreasing severity as the distance from the soybean field increased (Figure 5). Plants up to 50 feet in the downwind direction also exhibited glyphosate injury, including a wild rose growing in a fencerow (Figure 6). In this instance, a clear pattern existed in space and time that pointed toward a herbicide drift event that was later confirmed by the herbicide applicator.



Figure 3. Strawberry with chlorosis (Photo by Stephen Meyers).



Figure 4. Raspberry with chlorosis (Photo by Stephen Meyers).



Figure 5. Deadnettler at field edge (Photo by Stephen Meyers).



Figure 6. Wild rose with chlorosis (Photo by Stephen Meyers)

#### Additional Resources

For a quick reference of corn and soybean herbicide rotation restriction information, turn to pages 68 and 69 of the 2023 Midwest Vegetable Production Guide: Corn-and-Soy-Herbicide-Rotation-Restriction-Tables.pdf (mwveguide.org)

To register your specialty crop fields with Drift Watch, visit: DriftWatch – Home

Weed scientists at Purdue and other midwestern universities put together a series of herbicide drift bulletins available here: Dicamba and 2,4-D Fact Sheet Series | Herbicide-Drift Risk Management for Specialty Crops (Ohio-state.edu)

To file an off-target herbicide complaint, use this form from the Office of Indiana State Chemist: complainant\_form.pdf (purdue.edu). The current form allows those filing a complaint to indicate if they would like to document the incident only or pursue potential enforcement actions.

To learn more about properly removing herbicide residues from agricultural application equipment, visit Removing Herbicide Residues from Agricultural Application Equipment | Purdue Pesticide Programs

To submit an ugly plant (or insect) for diagnosis, visit the Purdue Plant and Pest Diagnostic Lab here: Plant & Pest Diagnostic Lab (purdue.edu)

## Dry Conditions Continue, Drought Conditions Expected to Worsen

(Austin Pearson, pearsona@purdue.edu, (765) 675-1177)

Temperatures warmed into the 80s by the end of Memorial Day weekend, but low dew point temperatures made the heat bearable. The air felt dry, and any time I would stand up from my lawn chair, I would be shocked by static electricity. The state average temperature between May 1 and May 30 was 62.3F, which was 0.5F above the 1991-2020 climatological normal (Figure 1). Climate Divisions in the northwest and southwest experienced the largest temperature departures this week (0.9F and 1.0F respectively). Accumulated Modified Growing Degree Days, between April 1 and May 30, ranged from 360 to 800 units across the state (Figure 2). Northwestern Indiana continued to run above normal and southeastern Indiana remained below normal for the period. Cooler temperatures in April and the beginning of May were to blame.

				iana				
		5/ 3	L/2023 to	5/30/20	23			
Temperature				Precipitation			4 9 9	
cd	temp	norm	dev	prcp	norm	dev	percent	
1	61.5	60.6	0.9	2.26	3.83	-1.57	59	
2	60.6	60.0	0.6	2.30	3.72	-1.42	62	
3	59.8	59.6	0.2	2.23	3.61	-1.38	62	4 5 9
4	62.9	62.1	0.9	2.38	4.25	-1.87	56	
5	61.6	61.5	0.1	2.43	4.23	-1.80	57	
5 6	60.6	60.6	-0.0	2.67	4.11	-1.44	65	
7	65.4	64.4	1.0	2.95	4.76	-1.81	62	S THE LET
8	64.3	63.7	0.7	2.87	4.76	-1.88	60	377 9
9	62.4	62.9	-0.5	2.53	4.62	-2.09	55	855
tate	62.3	61.8	0.5	2.52	4.22	-1.71	60	5-3-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5

Figure 1. Indiana climate division and state temperature, normal temperature, temperature departure from normal, precipitation, normal precipitation, precipitation departure from normal, and percent of mean precipitation for May 1-30, 2023.

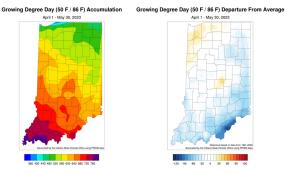


Figure 2. Total Accumulated Indiana Modified Growing Degree Days (MGDDs) April 1-May 30, 2023 (left) and Total Accumulated MGDDs represented as the departure from the 1991-2020 climatological normal (right).

The spigot turned off over the last seven days, which worsened the below-normal precipitation trend for the month. The entire state averaged 2.52 inches of rain from May 1 to May 30 (1.17 inches below normal) (Figure 1). Climate Division 9, located in southeast Indiana, was the driest (2.09 inches below normal). Most of the state averaged between 25-75 percent of normal since the beginning of the month (Figure 3). Dormant lawns, lowering water levels, and reduced streamflows have been reported across a large portion of the state. Jeff Burbrink, Elkhart County Extension Educator, indicated that his pond level dropped eight inches over a stretch of ten days.

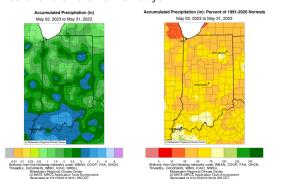


Figure 3. Interpolated map displaying accumulated precipitation for May 2-May 31, 2023 (left). Interpolated map displaying accumulated precipitation as a percent of the 1991-2020 climatological normal (right).

CoCoRaHS is a volunteer precipitation observation network and also has observers measuring evapotranspiration. Data between May 22 and May 29 indicated that ET rates ranged from 1 to 2 inches, which is fairly significant when we do not get rain. These ET rates can be viewed on the MRCC Drought Information page (Figure 4). Significant water loss can also be seen in the Purdue Mesonet four-inch soil moisture observations (Figure 5). Volumetric water content fell by more than 5 to 15 percent over the last week, which is why we are seeing things change quickly across the state. The two good things: 1) crops are building stronger root systems as they dig deeper to find moisture; and 2) weather has been perfect for making hay. Recent replanted crops may have issues finding moisture, so keep an eye on emergence in those areas. In response to the dryness, the June 1 US Drought Monitor (Figure 6) expanded abnormally dry conditions throughout much of the state, and we expect to see additional degradation given the forecast.

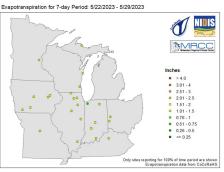


Figure 4. CoCoRaHS Evapotranspiration for 7-day period: May 22-29, 2023, which can be obtained from the MRCC Drought Information page.

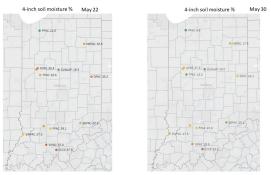


Figure 5. May 22 (left) and May 30 (right) Purdue Mesonet 4-inch soil moisture (volumetric water content) represented as a percentage. Data can be obtained by the Purdue Mesonet Data Hub.

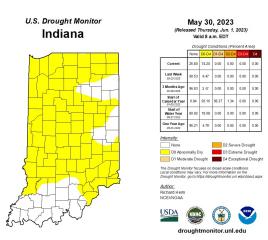


Figure 6. June 1, 2023, US Drought Monitor. The US Drought Monitor is released every Thursday morning by 8:30 AM.

Very isolated, convective precipitation was observed on May 30 and May 31, but did not resolve any of the broader drought impacts. The 7-day forecast, valid through June 7, does not show widespread precipitation across the state (Figure 7). Overall, precipitation will remain below normal, coupled with air temperatures in the upper 80s and low 90s. Paired with this, dew point temperatures are expected to drop into the 40s and, in some spots, the 30s. The 6-to-10-day climate outlook from the Climate Prediction Center has elevated chances for above-normal temperatures and below-normal precipitation through June 9 (Figure 8). The 8-14-day outlook depicts a cool down with a return to near normal precipitation (Figure 9). Breaking dry patterns is historically difficult, so we will see how long these drying conditions persist. Stay tuned.

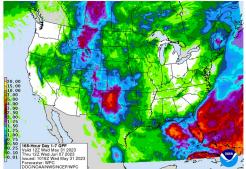


Figure 7. NWS Weather Prediction Center 7-day quantitative precipitation forecast for the continental United States, valid May 31-June 7, 2023.

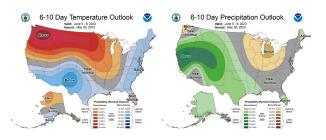


Figure 8. The CPC's 6-10-day temperature and precipitation outlooks, valid for June 5 through June 9, 2023.



Figure 9. The CPC's 8-14-day temperature and precipitation outlooks, valid for June 7 through June 13, 2023.

## 2023 OISC Clean Sweep Pesticide Disposal

(Nathan Davis, davi1280@purdue.edu)



The moment you've all been waiting for!

Please help us to get the word out. The 2023 OISC Clean Sweep Pesticide Disposal info/participant form is available via the OISC website at the link

https://oisc.purdue.edu/pesticide/clean sweep.html

If you are planning on participating in the program, please complete the attached 2023 OISC Clean Sweep participant form and return the participant form to me via the contact info on the form. Please keep the info form as that form has the dates and locations.

If you have any questions feel free to contact Nathan Davis (davi1280@purdue.edu), Pesticide Investigator and Clean Sweep Program Coordinator for the Office of Indiana State Chemist (oisc.purdue.edu).

#### Important forms

2023 OISC Clean Sweep Pesticide Disposal Information Form

2023 OISC Clean Sweep Pesticide Disposal Participant Form

## USDA Accepting Applications to Help Cover Costs of Organic Producers

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)



## Farm Service Agency

U.S. DEPARTMENT OF AGRICULTURE

This article is a news release that was published by the U.S. Department of Agriculture (USDA) on May 18, 2023.

The U.S. Department of Agriculture (USDA) will cover up to 75% of the costs associated with organic certification, up to \$750 per category, through the Organic Certification Cost Share Program (OCCSP). Indiana Farm Service Agency (FSA) encourages organic agricultural producers and handlers to apply for OCCSP by Oct. 31, 2023, for expenses incurred from Oct. 1, 2022, through Sept. 30, 2023.

As part of USDA's broader effort to support organic producers and in response to stakeholder feedback, this year FSA increased the cost share to the maximum amount allowed by statute.

"We're taking steps to better support Indiana organic producers," said Julia A. Wickard, State Executive Director for FSA in Indiana. "We've heard about this program's value in helping Indiana organic producers and handlers obtain or renew their certifications under the National Organic Program, and I'm pleased that we're able to increase and restore the cost share to the statutory limit this year. Organic certification costs have long been identified as a barrier to certification, and this assistance, at its full levels, will help Indiana organic producers participate in new markets while supporting and growing our local and regional food systems."

#### Cost Share for 2023

The cost share provides financial assistance for organic certification, and producers and handlers are eligible to receive 75% of the costs, up to \$750, for crops, wild crops, livestock, processing/handling and state organic program fees (California only).

Indiana producers have until Oct. 31, 2023, to file applications, and FSA will make payments as applications are received.

#### How to Apply

To apply, Indiana producers and handlers should contact their local FSA office USDA Service Center

(https://www.farmers.gov/working-with-us/service-center-locator). As part of completing the OCCSP application, producers and handlers will need to provide documentation of their organic certification and eligible expenses.

Organic producers and handlers may also apply for OCCSP through participating state departments of agriculture. Additional details can be found on the OCCSP webpage (https://www.fsa.usda.gov/programs-and-services/occsp/index).

#### Opportunity for State Departments of Agriculture

FSA is also accepting applications from state departments of agriculture to administer OCCSP. FSA will post a synopsis of the funding opportunity on grants.gov and will electronically mail the notice of funding opportunity to all eligible state departments of agriculture.

If a state department of agriculture chooses to participate in OCCSP, both the state department of agriculture and FSA County Offices in that state will accept OCCSP applications and make

payments to eligible certified operations. However, the producer or handler may only receive OCCSP assistance from either FSA or the participating state department of agriculture.

#### Other USDA Organic Assistance

USDA offers other assistance for organic producers, including the new Organic Transition Initiative

(OTI) (https://www.farmers.gov/your-business/organic/organic-tra nsition-initiative), which includes direct farmer assistance for organic production and processing, conservation and crop insurance.

For conservation, USDA's Natural Resources Conservation Service (NRCS) is helping producers adopt the new organic management standard, which allows flexibility for producers to get the assistance and education they need such as attending workshops or requesting help from experts or mentors. It supports conservation practices required for organic certification and may provide foregone income reimbursement for dips in production during the transition period.

USDA's Risk Management Agency (RMA) reminds producers interested in the Transitional and Organic Grower Assistance Program, also part of OTI, to visit with their crop insurance agent for more information. Premium benefits for eligible policies will be automatically applied to the producer's billing statement later this year.

For producers that participated in the Transitional and Organic Grower Assistance Program, also part of OTI, premium benefits for eligible policies will be automatically applied to the producer's billing statement later this year.

USDA's Risk Management Agency (RMA) also administers federal crop insurance options, including Whole Farm Revenue Protection (https://www.rma.usda.gov/en/Policy-and-Procedure/Ins urance-Plans/Whole-Farm-Revenue-Protection) and Micro Farm (https://www.rma.usda.gov/en/Fact-Sheets/National-Fact-Sh eets/Micro-Farm-Program), which may be good options for organic producers.

Also under OTI, is the USDA Agricultural Marketing Service (AMS) National Organic Program's (NOP) Transition to Organic Partnership Program (TOPP). TOPP builds mentorship relationships between transitioning and existing organic farmers to provide technical assistance and wrap-around support in six U.S. regions.

On May 10 USDA AMS announced the availability of approximately \$75 million in grant funding for the Organic Market Development Grant (OMDG) program. OMDG will fund businesses transitioning to organic or initiating new organic production or processing and support new, improved and expanded markets for domestically produced organic products with a focus on processing capacity, market access, and product development.

## In Some Areas Irrigation is Now More Critical

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)



Irrigation is now becoming more critical. Temperatures are high, and many areas are experiencing lower-than-normal rainfall. However, I do have some good news for you if you are looking for a source that has a lot of information about irrigation.

Lyndon Kelley is an Irrigation Educator for Purdue Extension and MSU Extension, and he maintains a webpage that contains a lot of information https://www.canr.msu.edu/irrigation/. Look under Specialty Crops Information

(https://www.canr.msu.edu/irrigation/#specialty) for videos, bulletins, and other irrigation resources.

Contact information

Lyndon Kelley can be reached at kelleyl@msu.edu or (269) 467-5511 (office)

### Southwest Purdue Agricultural Center Field Day \_Registration Now Open!

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

We are excited to announce that the Southwest Purdue Agricultural Center Field Day is scheduled for June 28, 2023, at the Southwest Purdue Agricultural Center (SWPAC), 4669 N. Purdue Rd. Vincennes, IN.



Purdue researchers and NRCS representatives will present their current research and demonstration projects in fruit and vegetable production conducted at SWPAC. The topics include a cover crop demonstration, high tunnel tomato cultivar evaluation, high tunnel tomato and cucumber disease and insect management, benefits of companion plants, strawberry production, irrigation management, weed management in organic sweet potato, soil health and pepper production, the effect of cover crops on pest and beneficial insects in watermelon production and more! Don't miss the opportunity to learn from fruit and vegetable production experts.

To register, visit purdue.ag/SWPAC\_register.

# Purdue Fruit and Vegetable Field Day – Register Now!

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)

We are happy to announce that Purdue Extension is presenting its annual Fruit and Vegetable Field Day on July 20, 2023, at the Throckmorton/Meigs Horticulture Farm, Lafayette, IN.

Registration is now open. To register your spot, visit https://cvent.me/5zevYD



A complete schedule of demonstrations is now available on the Vegetable Crops Hotline webpage. Look under the EVENTS tab.





Contact Lori Jolly-Brown at ljollybr@purdue.edu or Petrus Langenhoven at plangenh@purdue.edu if you have any questions.

## Small Farm Education Field Day – Register Now!

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)

The Purdue Small Farm Education Field Day is presented on July 27, 2023, at the Purdue Student Farm in West Lafayette, IN.

Registration for the field day is now open. To reserve your spot, visit https://cvent.me/ewWN3b.

Students register for free! Please get in touch with Lori Jolly-Brown to receive the discount code for student registration.



#### Visit the Purdue Student Farm webpage

https://www.purdue.edu/hla/sites/studentfarm/events/ for more information.





Contact Lori Jolly-Brown at ljollybr@purdue.edu or Petrus Langenhoven at plangenh@purdue.edu if you have any questions.

It is the policy of the Purdue University that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue is an Affirmative Action Institution. This material may be available in alternative formats. 1-888-EXT-INFO Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Vegetable Crops Hotline © Purdue University - vegcropshotline.org Editor: Petrus Langenhoven | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall Dr., West Lafayette, IN 47907 | (765) 496-7955