

# VEGETABLE CROPS HOTLINE

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



Issue: 707  
July 1, 2022

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Figure 2. The spined soldier bug preying on an armyworm caterpillar.

## The Hornworms are Here!

(Laura Ingwell, [lingwell@purdue.edu](mailto:lingwell@purdue.edu), (765) 494-6167)

The tobacco hornworm is one of the most devastating tomato pests in Indiana, if left unchecked. There are several natural enemies that help suppress this pest, such as stilt bugs (Figure 1), spined soldier bugs (Figure 2) and the parasitoid *Cotesia congregata* (Figure 3). Often, these natural enemies are not abundant until later in the season; the pests come first and their natural enemies take time to catch up. Therefore, scouting and managing the first generation of this insect with augmentation biological control or insecticides can be crucial.



Figure 1. A stilt bug resting on a gomphrena flower.



Figure 3. A caterpillar that has been parasitized by the wasp *Cotesia congregata*. Photo by J. Obermeyer

I have recently detected the first generation of the caterpillars hatching and feeding on tomatoes in the West Lafayette area. When the caterpillars are young and small, they can be difficult to detect (Figure 4). However, when they reach the last stage before pupating, they will eat almost an entire plant. The key to successful management is always EARLY DETECTION. When the young caterpillars are present, the best thing to look for are holes in the leaves or missing portions along the margins. Flip them over and you will often find the small caterpillar. The second sign is the actual frass (poop) from the caterpillar accumulating on the plant tissue just below where it is feeding. Hornworms prefer to feed on the underside of the leaf and are positioned upside down,

therefore when they defecate it rains down on the vegetation below. Scout your crop often and watch for the feeding and frass signs of hornworm infestations. Consult the *Midwest Vegetable Production* spray guide for product recommendations. There are a variety of biological and synthetic products available that have efficacy against hornworms. If relying on a biological product, remember that many times the insect has to consume tissue that has been treated and it may take time for the caterpillar to then die. Treating early and when the caterpillars are young will increase the efficacy of these products and result in less feeding damage.



Figure 4. An early instar hornworm.

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## Bacterial Spot of Tomato

(Dan Egel, [egel@purdue.edu](mailto:egel@purdue.edu), (812) 886-0198)

In the Midwest, three major bacterial diseases threaten tomato production. These diseases are bacterial canker, bacterial spot and bacterial speck. Although these diseases are all caused by bacteria, they vary in symptomology, biology and management options. In the last issue of the *Vegetable Crops Hotline*, we discussed bacterial canker. In this second in the series, we will discuss bacterial spot.

Bacterial spot causes lesions on all foliar portions of tomato plants. Leaf spots are usually circular, 1/16 inch, and dark. Where lesions are numerous upon a leaf, the tissue may be chlorotic (yellow) (Figure 1). (In contrast, each lesion of bacterial speck is often accompanied by chlorosis whether lesions are numerous or not.) Lesions of bacterial spot on fruit are dark, raised and up to 1/3 inch in diameter (Figure 2). The disease prefers warm, wet weather. Overhead irrigation will also spread this disease.



Figure 1: Lesions of bacterial spot of tomato may be associated with yellowing when many lesions occur close together.



Figure 2: Lesions of bacterial spot of tomato fruit can be quite large and scabby in appearance.

Bacterial spot is much more common in field tomatoes than in greenhouse or high tunnel tomatoes. This is because bacterial spot requires leaf wetness for infection to take place and rain to spread the bacteria from leaf to leaf and from plant to plant. For the most part, tomato plants under cover lack sufficient leaf wetness to allow bacterial spot to become a problem. The bacterial pathogen that causes bacterial spot does not become systemic such as with bacterial canker. This helps explain why bacterial spot is not a factor in greenhouse production. However, bacterial spot can be a factor in the transplant greenhouse since such plants are watered overhead. Once a tomato plant with bacterial spot is moved to a greenhouse where it is watered via drip, the lesions can't move from the original lesions and since the disease is not systemic, it won't move within the plant.

You may have heard about bacterial spot of pepper and pumpkin. Bacterial spot of pepper is closely related and may be able to go to tomato. Bacterial spot of pumpkin is related but will not affect



pepper or tomato.

Successful management of bacterial spot requires a combination of cultural and pesticide treatments. Since bacterial spot may be seed borne; the disease may have been brought in on your seed/transplants. However, the causal bacterium also survives on crop residue. Tomatoes should be rotated 2 to 3 years away from peppers or tomatoes. Treatment with copper hydroxide may reduce spread in the field. Some strains of the bacterial spot pathogen are resistant to copper products. In a recent Purdue University study in 2016 and 2017, 84% of bacterial spot strains collected were copper insensitive (resistant). To increase the amount of copper available on the leaf, copper products may be mixed with fungicides with the active ingredient mancozeb (e.g., Dithane®, Manzate®, Penncozeb®). Many copper products may be used in some organic schemes.

Streptomycin products are labeled for use on tomatoes only in the transplant greenhouse (e.g., Agri-mycin®, Harbour®). The survey mentioned above found that 58% of bacterial spot strains were insensitive to streptomycin. So, it makes sense to treat with a streptomycin in the transplant greenhouse before going to the field.

Products with the active ingredient hydrogen dioxide (e.g., Oxidate®) are also labeled for bacterial spot in the field and greenhouse. Hydrogen dioxide can kill bacteria on contact, however, it has very little to no residual. In general, I do not recommend the application of hydrogen dioxide products in the field for control of bacterial spot. The use of Oxidate® in the greenhouse makes more sense since the product can be easily applied multiple times. Do not substitute hydrogen dioxide for copper, streptomycin or Actigard®. Be careful when mixing Oxidate® with other products. When used with copper products, for example, Oxidate® may not mix well. Read the labels of all the products carefully. Oxidate® may be used in some organic schemes.

Another product that has been used for management of bacterial spot of tomato is acibenzolar-S-methyl (trade name Actigard®). Acibenzolar (ASM) is known as a systemic acquired resistance product. That is, it 'tells' the plant to turn on biochemical pathways that defend the plant from infection. ASM has been used with copper products to lessen the severity of bacterial spot of tomato. However, ASM can cause yield loss if used on tomatoes that are stressed due to drought or other environmental factors.

Serenade Opti® (an older name for this product is Serenade Max®) is labeled for bacterial spot of tomato. Serenade Opti® may be used in some organic schemes.

A similar microbial product is called LifeGard®. The mode of action is similar to Actigard® and to Serenade Opti®-the product is reported to activate plant host defenses. LifeGard® may be used in some organic schemes.

Another product for possible use in an organically approved certification is Regalia®. This is a botanical product—that is, it is an extract of a plant. Similar to some of the other products mentioned above, it may tell the plant is it under attack and start some biochemical pathways.

The fungicide Tanos® (common name of active ingredients, famoxadone, cymoxanil) has been trialed for activity against bacterial spot of tomato. While the results have not always been positive, it might make sense to use Tanos® when one is trying to manage one of the fungal diseases on the Tanos® label (for example anthracnose, early blight, late blight, Septoria leaf blight) and hope for some activity against bacterial spot as well.

Organic growers should always carefully consult with their certifying agency about what is allowed in their certification program.

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## Powdery Mildew-Biology

(Dan Egel, [egel@purdue.edu](mailto:egel@purdue.edu), (812) 886-0198)

Powdery mildew is a common disease of cucurbits in Indiana. This disease is more common on cantaloupe and pumpkin. However, we have observed powdery mildew more frequently on watermelon in recent years. We have also observed this disease on cucumber in high tunnels. If left uncontrolled, this disease can cause loss of foliage, loss of yield and lower quality fruit. This article will discuss the biology and management of powdery mildew of cucurbits.

Powdery mildew is relatively easy to recognize; talc-like lesions occur on both sides of the leaf (Figure 1). The fungus that causes powdery mildew, *Podosphaera xanthii*, does not require leaf wetness for infection of leaves, only high humidity. The optimum temperature for disease development is 68 to 81°F. *P. xanthii* may survive for a period in crop residue as a resilient fungal structure, but the disease is so easily windborne, that crop rotation is not always a practical control measure. The fungus that causes powdery mildew of cucurbits does not cause powdery mildew on other plant families. In the same way, powdery mildew of other plant families does not affect cucurbits.



Figure 1. Powdery mildew causes talc-like lesions on pumpkin leaves.

Cantaloupe growers will want to apply systemic fungicides for powdery mildew management 10 to 14 days before first harvest. Applications should be maintained throughout much of harvest. Watermelon have traditionally not been affected by powdery mildew as much as cantaloupe. But watermelon growers who are concerned about powdery mildew should make the first application when fruit are about softball stage since powdery

mildew can affect watermelon fruit. Powdery mildew does not require leaf wetness-this disease should continue to cause problems in dry weather.

Pumpkin growers should consider starting fungicide applications when the vines reach the 'bush' stage. That is, when the plants have grown upright just before they start vining out. At this stage, the humidity in the plant canopy can help powdery mildew colonies on the leaves to initiate.

The next article discusses fungicide recommendations for cucurbit powdery mildew.

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## Conventional Fungicide Recommendations for Cucurbit Powdery Mildew

(Dan Egel, [egel@purdue.edu](mailto:egel@purdue.edu), (812) 886-0198)

*The following article was written by a colleague located on Long Island in New York. She is an expert on cucurbit powdery mildew. The fungicides which are effective against cucurbit powdery mildew changes frequently as fungi become resistant to certain fungicides. While the situation Dr. McGrath describes may not match your field exactly, it makes sense to make most fungicide applications using the top choices given below and avoid those products which are described as non effective. Note that some products may be used in a limited amount of applications. As always, alternate FRAC codes.*

Margaret Tuttle McGrath

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Cucurbit powdery mildew control can be achieved with targeted fungicides applied starting at the action threshold of one of 50 older leaves with symptoms. It is important to look at the lower surface of older leaves as symptoms often appear there first. This disease typically starts to develop around start of fruit development so first flowers is when to start looking or when to start a preventive spray program. This pathogen has proven adept at developing resistance to fungicides, thereby rendering them ineffective. Fungicide recommendations are based on [fungicide evaluations and resistance monitoring work conducted at LIHREC](#). Alternating among fungicides that are chemically different (in different FRAC groups) is recommended to manage resistance and to comply with label restrictions on number of consecutive applications, which is two for most targeted fungicides.

Top choices to include in a fungicide program:

- DMI fungicides (FRAC 3). Proline® is highly effective, seasonal limit for a crop is 2 applications. Procure®, Luna Experience®, and Aprovia Top® are also good choices. Multiple DMI fungicides can be used in a program.

- Vivando® (50). Seasonal limit is 3 applications. Proviso®, another

FRAC 50, does not appear to be as effective as Vivando®.

- SDHI fungicides (7). Aprovia Top® and Luna Experience® have two active ingredients, SDHI as well as DMI.

Fungicides that could be included:

- Gatten® (U13) has exhibited variable efficacy; it was moderately effective in a fungicide evaluation in PA in 2021.

- Quintec® (13) or Torino® (U8). One application of either of these might contribute to control. Pathogen isolates resistant to both fungicides were found commonly in commercial crops treated twice with Quintec® in a program. Multi-fungicide resistance is common. Most of the Quintec®-resistant isolates in the 2021 collection and all in the 2020 collection were also resistant to Torino® and Endura® although these fungicides were not used in almost all locations, and these fungicides are not cross resistant.

Fungicides not recommended because of resistance:

Topsin M® (1) and QoI fungicides (Cabrio®, Flint®, Quadris®, etc.) (11) are not expected to provide any control because almost all pathogen isolates tested have been found to be resistant. Endura®, Pristine®, and Merivon® are not recommended because isolates with full resistance (insensitive to highest label rate) are common and there are other SDHI fungicides (Aprovia Top®, Luna Experience®) that bind enough differently that they are not fully cross resistant.

Example recommended targeted fungicide programs (there are other good combinations) (including a contact, protectant fungicide with each application is recommended):

Proline®, Vivando®, Proline®, Vivando®, Luna Experience†®, Vivando® (6 applications total)\*.

Proline®, Vivando®, Proline®, Vivando®, Procure®, Vivando®, Procure® (7 applications total)\*.

Proline®, Vivando®, Proline®, Vivando®, Aprovia Top®, Vivando® (7 applications total)\*.

Proline®, Vivando®, Aprovia Top®, Proline®, Vivando®, Luna Experience†®, Procure®, Vivando® (8)\*.

\*program has maximum number of applications of Proline® and Vivando® permitted to a crop.

†Aprovia Top® could be used instead of Luna Experience®

Additional information about this disease and its management are at the [Cucurbit Powdery Mildew website](#).

original posting was on the web at

<https://www.vegetables.cornell.edu/pest-management/disease-factsheets/cucurbit-powdery-mildew/>

Updated: June 2022



# Pollenizer Cultivar Observation for Seedless Watermelon Production

(Wenjing Guan, [guan40@purdue.edu](mailto:guan40@purdue.edu), (812) 886-0198)

Fruit set of seedless watermelons is reliant on growth hormones released by pollen tube growth and fertilization, the same as seeded watermelons. Pollen from the seedless plants, however, is not viable, thus it is crucial to have viable pollen from seeded cultivars transfer to the female flowers of the seedless plants. The plants that contribute pollen are called pollenizers or pollen donors. In general, the greater presence of male flowers from pollen donors within a given area will likely mean a greater probability of pollen transfer, and thus a greater yield of seedless watermelons. In addition, the timing and duration of male flower availability, plant growth pattern, and flower attractiveness to pollinators are also important characteristics of a pollenizer plant.

Growers may choose to use edible seeded cultivars as pollenizers, or specialized non-harvested pollenizers developed specifically for growing seedless watermelons. In some cases, growers may grow multiple pollenizer cultivars, or combine both traditional seeded cultivars and specialized pollenizers to ensure pollen is available throughout the flowering period of the seedless cultivar.

We used a pollenizer mixture this year in growing seedless watermelons. The pollenizer mixtures include 'Premium', 'Accomplice', 'Ace Plus', 'Ace', 'SP7', '800' and 'Wild Card Plus'. Meanwhile, we planted the pollenizers separately to compare their performance. '800' and 'Premium' are edible seeded watermelons, the others are non-edible pollenizers. Here is a short summary of our observation (Figure 1).

'Ace Plus' had the most flowers in the first three weeks after transplanting; 'Premium' and '800' had the least number of flowers in the first two weeks. At the fifth week, we found 'SP7' had the most flowers, followed by 'Ace', 'Ace Plus' and 'Wild Card Plus'. 'Accomplice' and 'Premium' had fewer flowers, and '800' had the least number of flowers. 'Accomplice' has a compact plant growth with short vines. 'SP7', 'Ace', 'Ace Plus' and 'Wild Card Plus' have long and thin vines and small foliage. '800' had the densest canopies compared to the other pollenizer cultivars.



Figure 1. Pollenizer cultivar demonstration. Transplanted on May 16, 8' apart between plants. Photos were taken on June 27.

## Irrigation Demonstration Update 2

(Wenjing Guan, [guan40@purdue.edu](mailto:guan40@purdue.edu), (812) 886-0198), (Liz Maynard, [emaynard@purdue.edu](mailto:emaynard@purdue.edu), (219) 548-3674), (Emerson Luna Espinoza, [elunaesp@purdue.edu](mailto:elunaesp@purdue.edu)) & (Christian Charlson, [ccharls@purdue.edu](mailto:ccharls@purdue.edu))

At Southwest Purdue Ag Center (SWPAC) and Pinney Purdue Ag Center (PPAC), we demonstrate irrigation impacts on several

fruiting vegetable crops. Tomato, pepper, eggplant, watermelon, and cantaloupe are planted on plastic-covered beds with drip tapes. They grow on beds side-by-side with and without irrigation. We used two approaches to schedule irrigation, one bed is irrigated based on evapotranspiration (Et), and another bed is irrigated based on soil moisture sensors. More information about this demonstration can be found in the previous newsletter [article](#)

At SWPAC (Vincennes, IN), the crops were planted on May 16. There was little rain since the beginning of June. The soil was dried out without irrigation. On the unirrigated bed, soil moisture levels at 12" depth dropped from 25% to about 10%, while soil moisture was maintained between 20-27% on irrigated beds. How do the different soil moisture levels affect the plants?

A dramatic effect was observed on tomatoes. Recorded last week, tomatoes grown on the unirrigated bed had 49% fruit showed blossom end rot (BER) on the first flower cluster and 40% of fruit with BER on the second flower cluster (Figure 1). Less than 10% fruit showed BER on irrigated beds which suggests BER is closely associated with soil moisture, with dry conditions promoting the occurrence of BER.

Planted at the same time, peppers and eggplants set fruit later than tomatoes, about 1-3 fruit were set on each pepper and eggplant plant. We have not noticed differences between irrigated and unirrigated plants on peppers and eggplants.

The first fruit sets on cantaloupes have passed softball size and started to form netting. Toward the end of last week, we noticed cantaloupe leaves started to wilt in the afternoon on the unirrigated bed but not on the irrigated beds. Watermelons recently start to set fruit. We did not see plant wilt on watermelons, but the overall vine growth on the unirrigated bed was less compared to vine growth on the irrigated bed.

At the time of writing the updating article (June 25), close to 0.6 in. rain occurred in the weekend, and there is a chance of precipitation toward the end of this week. The rains will be greatly helpful to the dry conditions, although they cannot reverse BER on tomato fruits that already set. We are not sure if the rain is timely enough to avoid yield loss and/or quality reduction on other vegetables. We will continue the update as the season progress.



Figure 1. Tomato blossom end rot symptoms on the unirrigated bed at SWPAC. The initial symptom is light green at the blossom end with tissues staying firm.



Figure 2. Crop stages at SWPAC: tomatoes set fruit at third or fourth flower clusters. Peppers and eggplants had 1-3 fruit sets. Photos were taken on June 27.

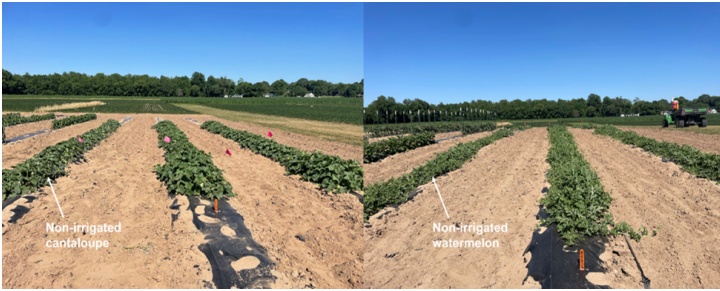


Figure 3. The unirrigated cantaloupe showed wilt symptoms in the afternoon. Watermelon did not show wilt symptoms, but overall vine coverage on the unirrigated bed was less compared to vine growth on the irrigated bed at SWAPC. Photos were taken on June 23.

At PPAC (Wanatah, IN), crops were planted on June 6 in plastic-covered beds with drip tape. There was not much rainfall in the week prior to planting, but the day of planting there was 0.6 inches of rainfall. The first irrigation was applied to Et and sensor treatments on June 17. We applied enough water to fully wet the beds to field capacity. In the first week, beds with irrigation calculations based on Et were irrigated three more times. The tomato bed irrigated based on soil moisture sensor was irrigated twice and the watermelon bed with sensor not at all. Beds without any irrigation have been on a steady decline in volumetric water content. The tomatoes are just beginning to have their first flower cluster and the peppers and eggplants are still in early stages. The watermelons are vining with the longest vine being 28 inches long. We have not observed any differences in irrigated versus unirrigated beds besides the volumetric water content.



Figure 4. Crop stages at PPAC on June 24. From left to right: tomato, pepper, eggplant, watermelon.

Funding for 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.

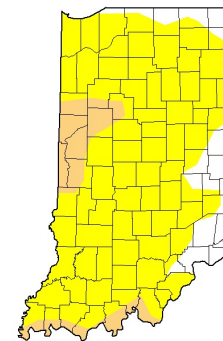
## Is Indiana Experiencing a Flash Drought?

(Beth Hall, hall556@purdue.edu)

The most recent U.S. Drought Monitor now has over 87 percent of Indiana in some level of dryness and/or drought (Figure 1). The rate this coverage has both expanded and intensified is impressive. Since at least 2012, drought specialists and climatologists have been studying “flash drought” including how to define it and therefore identify it. The original idea was based upon “flash floods” where flash drought develops quickly, rapidly intensifies compared to other droughts, and then tends to back off (i.e., weaken) relatively quickly. If you are ever in the mood to witness some rather animated – yet dry – debates about this, hang out with these climate scientists. Aside from the entertainment value, it is quite enlightening the many nuances associated with drought. A few highlights to the debate include: How fast is a “rapid onset” defined (e.g., 1 week, 1 month)? How is rapid intensification defined (e.g., 2-category change in the U.S. Drought Monitor within two weeks, 4-inch soil moisture depletion below a certain threshold within a defined period of time, rate of browning lawns)? How do we define when a flash drought is over, even if long-term drought continues? Some consensus is developing, but there is a long way to go. For example, there is consensus that a rapid intensification of drought could occur amid an ongoing, long-term drought. Indicators used to determine a rapid intensification may differ throughout the U.S. Given how quickly the U.S. Drought Monitor’s drought levels have expanded and increased over the past few weeks across Indiana, there is good justification to say that the state is experiencing a rapid intensification of drought. Whether it is called a “flash drought” is yet to be determined.

### U.S. Drought Monitor Indiana

June 28, 2022  
(Released Thursday, Jun. 30, 2022)  
Valid 8 a.m. EDT



#### Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <http://droughtmonitor.unl.edu/About.aspx>

#### Author:

Chris Riganti  
National Drought Mitigation Center



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

Figure 1. U.S. Drought Monitor for Indiana as of June 28, 2022.

Figure 2 illustrates how dry it has been in June. Thanks to the many weather stations and volunteer CoCoRaHS ([cocorahs.org](http://cocorahs.org)) observers across the state, the map shows where sub-county locations received less than 25 per cent of normal amounts for that period. Only far northeastern Indiana received above-normal precipitation for the month. The average temperature for June was near normal to slightly above normal (Figure 3). This may seem surprising given the extreme heat that was felt for several weeks. However, the important word in that sentence is “felt”,



since it was the unusually high dew-point temperatures that make the apparent temperature – or heat index – so much higher.

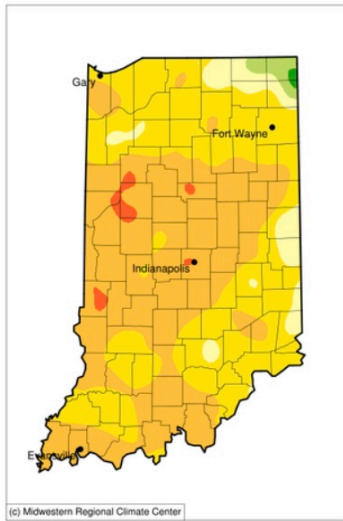


Figure 2. Precipitation from June 1-30, 2022 represented as the percent of what normally fell during that same period from 1991-2020.

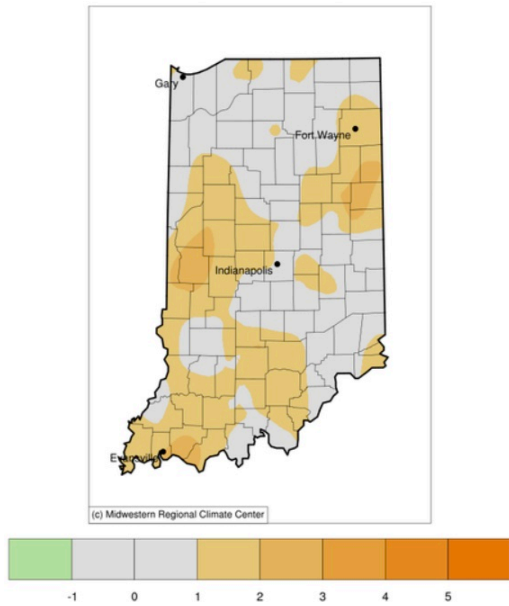


Figure 3. June temperature represented as the departure (in degrees Fahrenheit) from the 1991-2020 June average.

There is some good news in both the forecasts and the climate outlook. The National Weather Service is predicting around 0.5-1.5 inches of precipitation across the state through next Thursday, July 7, 2022 (Figure 4). There appears to be a bit of uncertainty and therefore confidence on when, where, and if this will happen, but if it does, it should provide some relief to these current conditions. The 8-to-14-day climate outlook (July 7-13, 2022) is favoring above-normal temperature with slight probabilities for above-normal precipitation. Finally, the climate outlook for July (released June 30, 2022) is continuing to favor above-normal temperatures with too much uncertainty about precipitation.

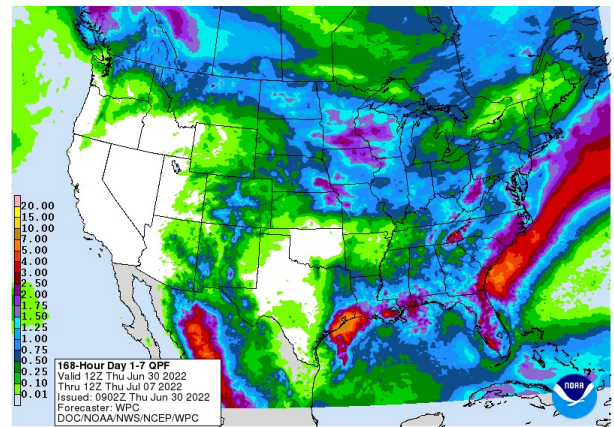


Figure 4. Forecasted precipitation amounts (inches) for June 30, 2022 through July 7, 2022.

Accumulated modified growing degree days, thanks to the higher-than-normal maximum daily temperatures experience in June, are 30 to 90 units above the climatological average in the southern two-thirds of Indiana with northern counties very near normal (Figures 5 and 6).

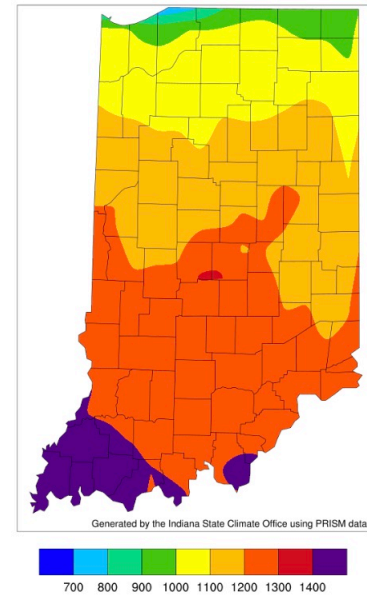


Figure 5. Modified growing degree day (50°F / 86°F) accumulation from April 15-June 29, 2022.

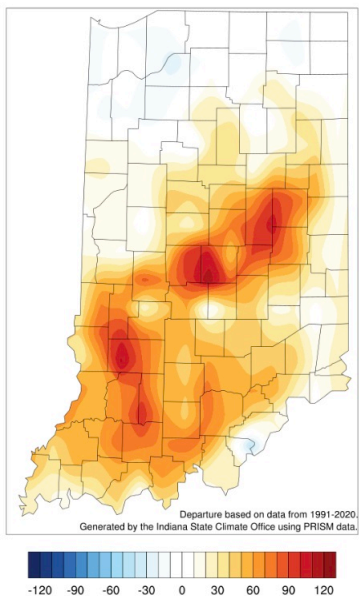


Figure 6. Modified growing degree day (50°F / 86°F) accumulation from April 15-June 29, 2022, represented as the departure from the 1991-2020 climatological average.

## Farm Service Agency Now Accepting Nominations for Farmers to Serve on Local County Committees

The U.S. Department of Agriculture (USDA) [Farm Service Agency](#) (FSA) is now accepting nominations for county committee members. Elections will occur in certain Local Administrative Areas (LAA) for members. LAAs are elective areas for FSA committees in a single county or multi-county jurisdiction. This may include LAAs that are focused on an urban or suburban area.

County committee members make important decisions about how Federal farm programs are administered locally. All nomination forms for the 2022 election must be postmarked or received in the local FSA office by Aug. 1, 2022.

Agricultural producers who participate or cooperate in a USDA program and reside in the LAA that is up for election this year, may be nominated for candidacy for the county committee. A cooperating producer is someone who has provided information about their farming or ranching operation to FSA, even if they have not applied or received program benefits. Individuals may nominate themselves or others and qualifying organizations may also nominate candidates. USDA encourages minority producers, women, and beginning farmers to nominate, vote and hold office.

Nationwide, more than 7,700 dedicated members of the agricultural community serve on FSA county committees. The committees are made up of three to 11 members who serve three-year terms. Producers serving on FSA county committees play a critical role in the day-to-day operations of the agency. Committee members are vital to how FSA carries out disaster programs, as well as conservation, commodity and price support programs, county office employment and other agricultural issues.

### More Information

Producers should contact their local FSA office today to register and find out how to get involved in their county's election, including if their LAA is up for election this year. To be considered, a producer must be registered and sign an FSA-669A nomination form. The form and other information about FSA county committee elections are available at [fsa.usda.gov/elections](https://fsa.usda.gov/elections).

Election ballots will be mailed to eligible voters beginning Nov. 7, 2022. Producers can find their local USDA Service Center at [farmers.gov/service-locator](https://farmers.gov/service-locator).

USDA touches the lives of all Americans each day in so many positive ways. In the Biden-Harris administration, USDA is transforming America's food system with a greater focus on more resilient local and regional food production, fairer markets for all producers, ensuring access to safe, healthy and nutritious food in all communities, building new markets and streams of income for farmers and producers using climate smart food and forestry practices, making historic investments in infrastructure and clean energy capabilities in rural America, and committing to equity across the Department by removing systemic barriers and building a workforce more representative of America. To learn more, visit [www.usda.gov](https://www.usda.gov).

## The Diverse Cornbelt Project

(Liz Maynard, [emaynard@purdue.edu](mailto:emaynard@purdue.edu), (219) 548-3674)

The [Diverse Cornbelt](#) project (#DCB) is a five-year, multi-disciplinary project exploring the real-world impacts of diversified farming systems beyond corn and soybeans in Indiana, Illinois, and Iowa. With more than 30 partners, we are seeking concrete options for diversification and understanding the agronomic, economic, social, infrastructure and policy changes that could make them viable.

In order to understand the current system and explore future possibilities—in order to even imagine what diversity means in the Corn Belt of the future—we need to hear from farmers, non-farm rural residents, city and town officials, bankers, grocers, processors, investors, policy makers and more. We need to hear from you.

Please contact Emily Usher ([eusher@purdue.edu](mailto:eusher@purdue.edu)) if you would be willing to join a focus group, host research on your farm or contribute your insights to the Diverse Corn Belt Project. Your vision can help us shape the future.

For more information about DCB, check out [www.DiverseCornBelt.org](https://www.DiverseCornBelt.org).

## Sign Up for 2022 Ag Census by June 30

**June 30, 2022 is the last day to sign up** for the 2022 Ag Census. If you have never received a census and are new to NASS surveys, [sign up to be counted](#) today. You do not need to sign up if you already receive NASS surveys.

### Key Dates:

- June 30, 2022 - sign up ends



- November 2022 – census mails out
- February 2023 – response deadline
- Spring/summer 2024 – data release

The Census of Agriculture is a complete count of U.S. farms and ranches and the people who operate them. Even small plots of land – whether rural or urban – growing fruit, vegetables or some food animals count if \$1,000 or more of such products were raised and sold, or normally would have been sold, during the Census year. The Census of Agriculture, taken only once every five years, looks at land use and ownership, operator characteristics, production practices, income and expenditures. For America’s farmers and ranchers, the Census of Agriculture is their voice, their future, and their opportunity.

[USDA - National Agricultural Statistics Service - Census of Agriculture](#)

## Purdue Fruit, Veg & Hemp Field Day July 21

Purdue Fruit, Veg & Hemp Field Day will be held at Meigs Purdue Ag Center (9101 S 100 E, Lafayette, IN 47909) on July 21, 2022.

Register the event <https://tinyurl.com/ypfubpkp>

If you have any questions about this event, please contact Petrus Langenhoven at (765) 496-7955, [plangenh@purdue.edu](mailto:plangenh@purdue.edu) or Lori Jolly-Brown (765) 494-1296, [ljollybr@purdue.edu](mailto:ljollybr@purdue.edu).



**2022**  
*Purdue Fruit, Veg,  
and Hemp Field Day*

**THURSDAY JULY 21, 2022**  
Purdue Meigs Ag Center  
9101 S 100 E, Lafayette, IN 47909

REGISTER:  
<https://tinyurl.com/ypfubpkp>

PRESENTED BY: **PURDUE UNIVERSITY** Extension

Purdue Fruit, Veg, and Hemp Field Day

## Purdue Small Farm Education Field Day

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Vegetable Crops Hotline © Purdue University - [vegcropshotline.org](http://vegcropshotline.org)

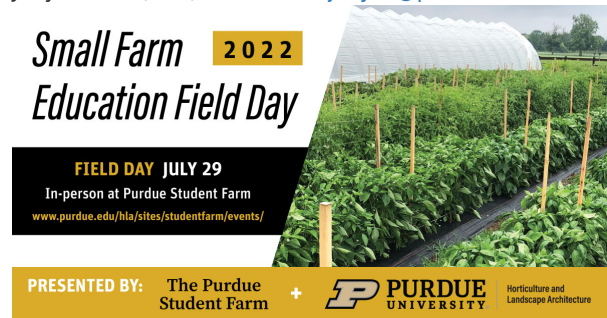
Editor: Wenjing Guan | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall Dr., West Lafayette, IN 47907 | (812) 886-0198

## July 29

The annual Purdue Small Farm Education Field Day will be presented on July 29<sup>th</sup> from 9 am – 12 pm at the Purdue Student Farm, West Lafayette.

Register the event [https://purdue.ca1.qualtrics.com/jfe/form/SV\\_25gK2j29sF71s9o](https://purdue.ca1.qualtrics.com/jfe/form/SV_25gK2j29sF71s9o)

If you have any questions about this event, please contact Petrus Langenhoven at (765) 496-7955, [plangenh@purdue.edu](mailto:plangenh@purdue.edu) or Lori Jolly-Brown (765) 494-1296, [ljollybr@purdue.edu](mailto:ljollybr@purdue.edu).



*Small Farm Education Field Day* **2022**

**FIELD DAY JULY 29**  
In-person at Purdue Student Farm  
[www.purdue.edu/hla/sites/studentfarm/events/](http://www.purdue.edu/hla/sites/studentfarm/events/)

PRESENTED BY: The Purdue Student Farm + **PURDUE UNIVERSITY** Horticulture and Landscape Architecture

## Pinney Purdue Field Day Aug. 9, 2022 – Registration Open

The Pinney Purdue Vegetable Field Day/Twilight Meeting will be held August 9, 2022, 5 to 8 p.m. Central time (6 to 9 p.m. Eastern time) at 11402 S. County Line Road, Wanatah, IN. The evening program will feature plot tours for farmers and for homeowners featuring topics of irrigation, sweet corn, pumpkins, dry beans, equipment, preserving produce, soil health and cover crops. A detailed program is available here <https://extension.purdue.edu/events/county/porter/2022/08/pinney-purdue-vegetable-field-day.html>. Dinner will be provided. Please register at [puext.in/Veg/Evening2022](http://puext.in/Veg/Evening2022).

For ag professionals and educators a similar program will be held 2 to 4 p.m. Central time (3 to 5 p.m. Eastern time). Separate registration is required.

For more information contact Nikky Witkowski at (219) 465-3555 or [nikky@purdue.edu](mailto:nikky@purdue.edu).