

FANCY FRUIT

Issue: 23-08
July 6, 2023

A Newsletter for Commercial and Advanced Amateur fruit growers.

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Crop conditions

(Chloe Richard, richa267@purdue.edu)

At the Meigs Horticultural facility, we finally received the rain we have been asking for! Our total rainfall from the past two weeks is 3.79 inches. Now we will focus on completing our cover sprays in a timely manner to suppress disease pressure.



Watermelons- fruit set



Pears- fruit development



Plums- fruit development



Apple: (Rosalee): fruit development



Grapes- berry touch/ bunch closure



Black Currant- fruit development



Florican Fruiting Blackberry- green fruit (we are battling high populations of Japanese Beetles)

Lots of rain. Is the drought over?

(Beth Hall, hall556@purdue.edu)

For the past seven weeks, abnormally dry conditions gradually spread and intensified across Indiana to eventually cover over 98% of the state. Conditions were looking dire, those with late-planted crops may have started getting worried, and water supply managers may have started expressing quiet concerns for those reliant upon groundwater. Then the rain came. Over the past two weeks, most of Indiana has received at least 1.5 inches of rain with southern and eastern counties receiving over three inches. In fact, some counties have received over five inches (Figure 1)! Does this mean our drought is over?

Once again, the answer depends upon where in Indiana one is located. For those in southern and eastern Indiana, conditions are looking good. Comparing that same 2-week period to

climatology indicates that the rain that fell over this period was above normal with several counties getting over twice the amount of rain that is typical (Figure 2). Unfortunately, most counties in central, western, and northern Indiana are still struggling to not only receive normal amounts of rain but catch up from the serious deficits that have been accumulating.

Figure 3 presents the latest release of the U.S. Drought Monitor (USDM) for Indiana based upon data through July 4, 2023. It is important to realize that the USDM incorporates a variety of both quantitative and qualitative information when determining changes each week and reflects the fact that drought rarely go away quickly. One or two weeks of above-normal precipitation will likely provide short-term improvements, but a more sustained pattern of normal precipitation would be needed to eliminate drought completely.

Another factor that will be slowing the rate of drought improvement is the increase in temperature likely to continue over the next several months. This will increase the rate of evapotranspiration further offsetting what precipitation may fall. Over the past two weeks, temperatures have been near normal. However, while short-term (1 to 2 weeks) climate outlooks are favoring below-normal temperatures, it is the warmer time of the year. We have certainly been feeling the heat the last several days!

Accumulated modified growing degree days since April 15 (Figure 4) are still at least 60 units below normal with southern counties lagging by almost 200 units (Figure 5).

The good news for those still wanting more rain is that the climate outlooks for the next two weeks as well as the month of July are favoring above-normal precipitation. It is still too early to know if this will fall evenly over time or as heavy downpours with potential severe weather

involved. Regardless, the additional rainfall will be welcomed and hopefully will continue to improve drought conditions for the entire state!

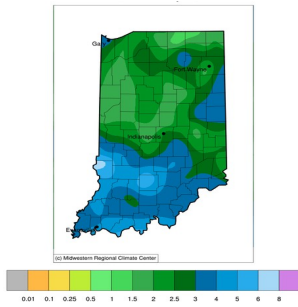


Figure 1. Total precipitation (in inches) from June 22 through the early morning of July 5, 2023.

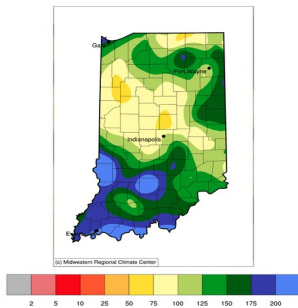


Figure 2. Percentage of the total precipitation amount received from June 22 through July 05, 2023, compared to what normally has fallen during that same period from 1991-2020. A value of 100% would equal the climatological normal amount.

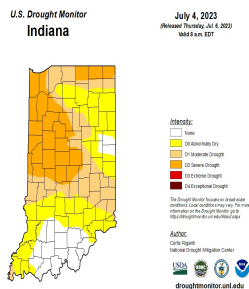


Figure 3. U.S. Drought Monitor for Indiana as of July 4, 2023. Source: <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?IN>

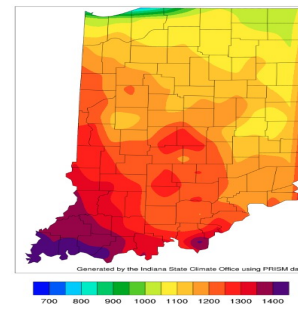


Figure 4. Modified growing degree day (50°F / 86°F) accumulation from April 15-July 4, 2023.

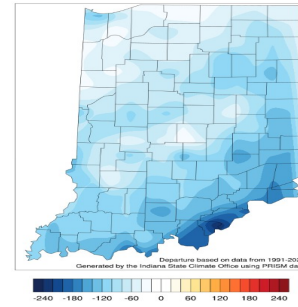


Figure 5. Modified growing degree day (50°F / 86°F) accumulation from April 15-July 4, 2023, represented as the departure from the 1991-2020 climatological average.

Figure 3. U.S. Drought Monitor for Indiana as of July 4, 2023. Source: <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?IN>

Fire Blight

(Janna L Beckerman, jbeckerm@purdue.edu, (765) 494-4628)

With last week's thunderstorms and severe weather, fire blight continues to threaten crops: Hail can physically damage the tree and allow entry of the bacteria (Fig. 1) and secondary spread of the pathogen.

Secondary spread of fire blight develops when stormy weather (especially hailstorms) occurs after the primary (blossom) infections. The amount of fire blight that develops after severe weather appears to be directly related to the amount of disease in the orchard, with inoculum levels highest near infected blossoms, cankers, or blighted shoots that were not previously

removed (Fig. 2). Keep in mind that early freeze damage was an ideal infection court for the fire blight bacterium. During severe weather, wind-driven rain easily spread the bacteria throughout the orchard.



Figure 1. Trauma blight in a poorly maintained orchard. Photo by George Sundin.



Figure 2. Blossom blight in Gala, 2023. Photo by Janna Beckerman.

At this point, growers should monitor their orchards for fire blight strikes, removing any and all infected shoots, sterilizing between cuts, if the incidence of the disease makes this possible. Growers can use a can of Lysol or a spray bottle of 10% bleach, or any other disinfectant (trisodium phosphate, quaternary ammonium compounds), to sterilize between cuts, as poor sterilization techniques can inadvertently spread fire blight. Keep in mind that pruning of large trees may be impractical because of the difficulty of doing a thorough job of blight removal.

At this stage in the season, pruning should NOT stimulate additional shoot growth as we are in the dormant season with little risk of spreading disease. I do not recommend the “ugly stub method” (where large chunks of tree are removed, but long stubs are left to mark where

additional pruning should be done in the spring). Subsequent studies have shown mixed results with this approach, which still leaves fire blight inoculum present, and presents an excellent infection court for black rot, white rot and other opportunistic pathogens. The rapid and complete removal of fire blight strikes is the only proven method to limit secondary spread and is essential for minimizing loss. That said, keep in mind that pruning may not be effective during severe fire blight outbreaks, and that the bacteria spreads more than 12” past the symptomatic tissue (Fig. 1, 2), so cuts should extend at least 18” past symptomatic tissue, and ideally to where a good pruning cut can be made.

It is important to stress that THE ONLY effective chemical control for trauma blight currently available is streptomycin. Streptomycin needs to be applied within 4 to 12 hours to maximize control, especially if there are active fire blight cankers or strikes in the orchard or if the trauma event resulted in extensive foliar damage. The sooner streptomycin can be applied after the event the more effective it is in killing the bacteria before they infect and spread. Do not apply streptomycin later than 18 hr. The repeated use of streptomycin sprays after petal fall encourages the selection of streptomycin-resistant *Erwinia amylovora*, the bacterium that causes fire blight. We don’t need to add Indiana to the list of states with strep-resistant *E. amylovora* (Missouri, California, Washington, Oregon, New York and Michigan). Finally, streptomycin should never be sprayed as a preventive measure for shoot blight. This is not an effective use of this material and only promotes the development of streptomycin-resistant strains. The best use of streptomycin is to prevent the infection of blossom blight, followed by trauma blight, when applied within ~12 hours.

The fire blight bacteria rarely comes in with these storms, which means the problem was already present in the orchard. If your orchard has a history of fire blight, I would strongly encourage you to consider applying Apogee or Kudos (Prohexadione-Ca) for spring of 2024 (instructions begin on page 19 of the [Midwest Fruit Pest Management Guide](#), with additional information on page 47). Apogee is a growth regulator that does not directly kill the fire blight bacterium, but reduces shoot growth, thereby increasing plant resistance by reducing host vigor. Apogee suppresses apple shoot growth when applied near petal fall as a single spray, or as several applications over time. Apple response to Apogee depends upon the cultivar, timing, rate of application, crop load, and even geographical location. Regardless of this variability, Apogee remains one of the best management tools available for controlling the shoot blight phase of fire blight after a freeze or trauma like hail, and should be considered for next year.

Finally, fire blight resistant apple and pear varieties (root stocks and cultivars) are a great way to minimize reliance on pesticides. For a list of these varieties (and which are highly susceptible, see the [Fire Blight](#) Extension bulletin for more information.

Tissue analysis for grapes and small fruit

(Miranda Purcell, mrpurcel@purdue.edu)

Tissue analysis is the most reliable means of determining plant nutritional status. Combined with soil testing, tissue analysis can help pinpoint the source of problems and determine what measures may be needed to ensure proper nutrition of the crop. Tissue analysis samples should be collected at the appropriate time to

give the most meaningful results.

Grapes: samples should be taken about 70 days after full bloom or at the start of veraison, usually early to mid-August; collect 100 leaf petioles (see Figure 1 below)

Strawberry: sample the first fully expanded leaves after renovation, usually in mid to late July; collect 30-60 leaves

Brambles: sample leaves on non-fruiting canes (primocanes) between August 1 and 20; collect 30-60 leaves

Blueberries: sample leaves during first week of harvest; collect 30-60 leaves

Be sure to collect samples to represent the entire field, not just from a few plants. Sample different varieties separately. If specific problems exist, collect separate samples from both normal and problematic areas of the planting. After collection, leaves should be rinsed gently in tap water to remove any pesticide residues and dust that might affect analysis, laid out to dry for a couple of days, then bagged in paper bags for submission to the lab. Some labs offer tissue analysis sample kits.

There are several private companies and a few universities that provide tissue analysis. A list of certified soil and plant analysis testing labs serving Indiana growers is located at: <https://ag.purdue.edu/btny/ppdl/Documents/Compiled%20Lab%20Lists/PPDL-4-Soil%20Testing%20Labs-1.25.18.pdf>

For desired ranges of nutrient concentrations in small fruits: <https://www.uvm.edu/vtvegandberry/factsheets/tissuetest.html>



Figure 1. Petioles (leaf stems) on grapevine should be collected around veraison for tissue sampling. Photo from PennState Extension

USDA to Host Two In-Person Listening Sessions for Producers in the RMA Springfield, Ill. Region to Hear About Crop Insurance Coverage for Prevented Planting

(Peter M Hirst, hirst@purdue.edu, (765) 494-1323)

USDA to Host Two In-Person Listening Sessions for Producers in the RMA Springfield, Ill. Region to Hear About Crop Insurance Coverage for Prevented Planting

SPRINGFIELD, Ill., June 27, 2023 –The U.S. Department of Agriculture (USDA) is inviting agricultural producers from throughout the Springfield, Ill. Region of Illinois, Indiana, Michigan and Ohio to participate in one of two special in-person listening sessions to provide comments on the Prevented Planting Request for Information published in the Federal Register on May 23, 2023. The events will give producers the opportunity to meet with members of the USDA’s

Risk Management Agency (RMA) and directly comment on their needs and possible changes to prevented planting crop insurance coverage. The first listening session will be held on **July 11, 10 a.m. - 12 p.m. at the Southern Indiana Purdue Agricultural Center, Dubois, Ind.**; the second is **July 12, 1 - 3 p.m. at the Lenawee County Extension Office, Adrian, Mich.**

“We are excited to have this opportunity to meet with producers and receive comments about such an important issue as prevented planting and the topics that are being considered,” said Brian Frieden, Director of the RMA Springfield Regional Office. “One of our top priorities at RMA is providing the best risk management tools we can by listening to our nation’s producers. This session helps us accomplish this priority and help our customers the best we can.”

The May 23 request for information on prevented planting outlines several questions for the listening session focusing on topics including:

- Harvest Price Option – Feedback on whether to allow the prevented planting payment calculations to be based on the higher of the projected price or the harvest price under the revenue protection plan of insurance.
- “1 in 4” Rule – Input on the challenges or experiences since the rule (to be eligible for prevented planting coverage, acreage must have been planted to a crop, insured, and harvested in at least 1 out of the previous 4 crop years) was implemented nationwide.
- 10 percent additional coverage option – Input on if RMA should reinstate the option to buy-up prevented planting coverage by 10 percent.
- Contract price – Whether prevented planting costs are higher for contracted crops and how prevented planting payments should be calculated for contract

crops.

- General – Willingness to pay additional premium for expanded prevented planting benefits, recommendations on other prevented planting limitations, etc.

“The direct feedback and input that will come out of this session is vital in improving insurance coverage for prevented planting,” Frieden added.

The request for information, which includes specific questions and instructions for submitting written feedback by September 1, is available in this [Federal Register notice](#).

Prevented planting insurance provisions provide valuable coverage when extreme weather conditions prevent expected plantings. Prevented planting is when a producer is unable to plant an insured crop due to an insurable cause of loss in time to grow a viable crop. Final planting dates and late planting periods are detailed in a producer’s crop insurance policy, and they vary by crop and location. Prevented planting coverage is intended to assist with normal costs associated with preparing the land up to the point of seed going into the ground (pre-plant costs).

More Information

Crop insurance is sold and delivered solely through private crop insurance agents. A list of crop insurance agents is available at all USDA Service Centers and online at the [RMA Agent Locator](#). Learn more about crop insurance and the modern farm safety net at [rma.usda.gov](#) or by contacting your [RMA Regional Office](#).

USDA touches the lives of all Americans each day in so many positive ways. Under 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 [usda.gov](#).

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Summer Field Tour

(Peter M Hirst, hirst@purdue.edu, (765) 494-1323)

July 14, 9:00 am - 3:00 pm

Jacobs’ Family Orchard
4676 North 75 West New Castle
Indiana 47362

<https://jacobsfamilyorchard.com>

The summer tour for Indiana fruit and vegetable growers will be held on Friday July 14 at Jacobs’ Family Orchard near New Castle, IN. While primarily apple growers, growing over 30 cultivars, The Jacobs family also grows various vegetable crops such as pumpkins, cucumbers, tomatoes, peppers, cabbage, broccoli, sweetcorn and squash. All produce is sold in the market on the farm. Each year, about 1200 Mums are grown from plugs.

The Jacobs purchased the apple orchard in 2002 from Rex Anderson, a long-time apple grower. In fact, the orchard has been in production since WW 1. The Jacobs bought the farm to diversify their corn and bean operation. Many of the apple trees are big trees, some up to 40 years old. However they have been replanting and planted another 1000 trees this year on a trellis. They

have a good crop this year and may try U-pick for the first time. Apples are either sold fresh at the market, made into cider or used in the bakery and turned into apple crisp.

Since Stephanie graduated and returned full time to the business in 2016, the marketing activities have expanded. There is a new kitchen in the market where homemade apple and peach crisp are made, along with other baked goods and donuts. Outside attractions for families and kids include a children's playground and a haunted house and maze along with hay rides. Visitors to the farm can cut their own flowers in the sunflower patch. Communication to customers is through social media, primarily Facebook and Instagram.

All fruit growers, vegetable growers and others interested are welcome to attend. We will tour fruit and vegetable production areas as well as discuss the various marketing activities. The Field Tour is free and all are welcome to attend. The field tour starts at 9:00 am (Eastern) and will end around 3:00 pm. Lunch will be available onsite.



Purdue Fruit & Vegetable Field Day 2023

(Lori K Jolly-Brown, ljollybr@purdue.edu)

REGISTER HERE

Purdue Fruit & Vegetable Field Day 2023
Thursday, July 20, 2023
Purdue Meigs Ag Center
9101 S. 100 E, Lafayette, IN 47909

Coordinator: Petrus Langenhoven
Extension Staff: Lori Jolly-Brown, Jay Young, Chloe Richard, and Paul Howard

FIELD DEMONSTRATIONS

- Sweet Corn Pest Management Updates
- Silage Tarps for Weed Management in Potatoess
- Watermelon Weed Management
- Summer 2023 Collard Insect Management Trial
- Black Soldier Fly Composting and Specialty Crop Production
- Two-year Plasticulture Strawberry Research Update
- High Tunnel Diversification and Biological Control
- Does Increasing Soil Health Improve Pepper Yield?
- Unmanned Aerial Vehicle Demonstration

Contact [Lori Jolly-Brown](#) or [Petrus Langenhoven](#) if you have any questions.



Purdue Small Farm Education field day

(Lori K Jolly-Brown, ljollybr@purdue.edu)

[REGISTER HERE](#)

2023 FIELD DAY SCHEDULE

Thursday, July 27, 2023

Registration 8:00 – 9:00 am EST

Demonstrations at 9:00 am – 12:00 pm EST

Coordinator: Petrus Langenhoven

Extension Staff: Lori Jolly-Brown, Lais McCartney, and Patrick Williams

Please join us for the 2023 Small Farm Education Field Day!

The EMT food truck will be on site for those who would like to purchase lunch after the educational demonstrations end. The Kona Ice truck will also be on site for a FREE cool summer treat for all attendees, compliments of Purdue Extension and Purdue Horticulture and Landscape Architecture!



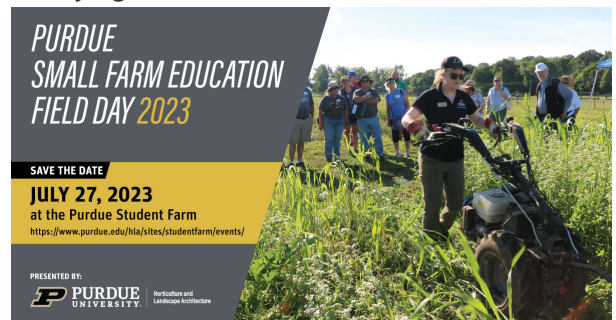
Demonstrations at the Field Day

- High Tunnel Table Grape Production
Miranda Purcell
- High Tunnel Pepper Production and Variety Selection
Petrus Langenhoven and Dennis Gustavo Toc Mo
- Growing Grains on the Small Farm – Dry

Edible Bean Variety Trial

Wil Brown-Grimm and Ashley Adair

- Predator-Prey Dynamics in High Tunnel Crop Production
Sam Willden
- Biorational Pesticide Efficacy for Controlling Caterpillars and Flea Beetles in Crucifer Crop Production
Laura Ingwell
- Black Soldier Fly Composting and Specialty Crop Production
Milena Agila and Laura Ingwell
- Raised Garden Beds for Vegetable Production
Amy Thompson and Nathan Shoaf
- Postharvest Food Safety Demonstration
Scott Monroe and Amanda Deering
- Silage Tarps and Their Potential Uses on Small Farms
Steve Meyers and Josue Cerritos
- Choosing Fertilizer Injectors for Drip Irrigation for Small Plots
Wenjing Guan



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