

FANCY FRUIT

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A Newsletter for Commercial and Advanced Amateur fruit growers.

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Apple: fruit sizing but crops tend to be bunchy



Blackberry: harvest underway



Grape: Harvest approaching

Crop Conditions

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



Red raspberry: Harvest underway

First time Indiana is drought free since early June 2020

(Beth Hall, hall556@purdue.edu)

It is amazing to think that some part of Indiana has been in at least the *Abnormally Dry* category of drought on the US Drought Monitor for over a

year. While it has not always been the same parts of the state, certainly northern Indiana has been the most consistently dry. Recently, however, the state has been in a wet pattern, helping to relieve most precipitation deficits. It seems when one half of the United States (US) is in a rather stagnant weather pattern, the other half experiences the opposite. Unfortunately, the western half of the US has been extraordinarily warm and dry. This is due to a blocking high pressure system that is forcing the jet stream to maintain a rather consistent pattern that encourages relatively cooler and wetter conditions in the eastern half of the country. Should that blocking high break apart or weaken, Indiana will likely see more typical transitions between wet and dry groups of days. It is possible that the weather patterns will shift and Indiana will be in an extended drier phase, but there are no strong indications at this time that an extended dry period will occur any time soon. The latest climate outlook for the rest of July has too much uncertainty for most of Indiana with respect to temperature (i.e., climate models are favoring neither above- nor below-normal temperatures for the rest of the month). Precipitation for the rest of July is also not favoring abnormally wet or dry conditions with the exception of southeastern Indiana that has slightly enhanced chances for wetter-than-normal conditions.

The three-month climate outlook – representing August-October – has equal chances for above, below, and normal precipitation amounts (Figure 1). However, there are enhanced chances for above-normal temperatures during this extended period (Figure 2). If the temperature outlook comes to fruition, that would imply increased evapotranspiration rates that could lead to abnormally dry or even moderate drought conditions depending upon the timing of any

precipitation events.

Modified growing degree-day accumulations now range from about 1300 to 1800 units across the state, with higher amounts to the south (Figure 3). From a climatological perspective, those amounts are slightly below normal across southern Indiana and slightly above normal for Indiana's northernmost counties. However, departures are rarely greater than 100 units. Figure 4 illustrates the accumulation of MGDDs from April 1 through July 14th of this year compared to the most recent four years.

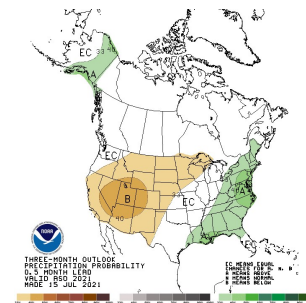


Figure 1. National three-month climate outlook of precipitation relative to normal for August through September (source: Climate Prediction Center).

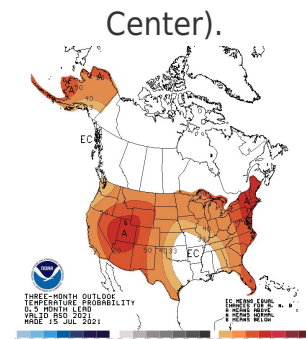


Figure 2. National three-month climate outlook of temperature relative to normal for August through September (source: Climate Prediction Center).

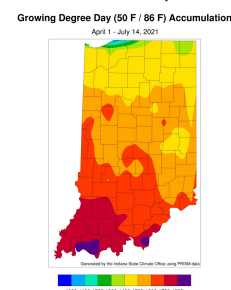


Figure 3. Modified growing degree day accumulations from April 1 to July 14, 2021.

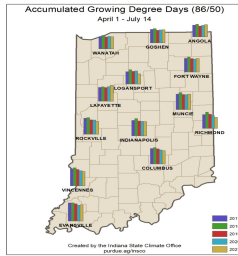


Figure 4. Comparison of 2021 modified growing degree day accumulations from April 1 – July 14 to the past four years.

Tissue analysis for grapes & 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 (only the petiole (stem) should be submitted for analysis, leaf blade can be discarded)

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/tissue-test.html>

Updates on Spotted-wing Drosophila (SWD) activity in Indiana blueberries

(Elizabeth Yim Long, long132@purdue.edu)

Summer is a time we always look forward to delicious fresh fruit! According to the 2017 USDA Census of Agriculture, 150+ farms grow some 600 acres of blueberries in Indiana! Some common varieties include Bluecrop, Bluejay, Blueray, Duke, Elliot, Jersey, and Nelson. The typical blueberry season in Indiana runs from late June or early July through August, but this can vary with blueberry variety, and location in the state. Most commercial blueberry plantings are in the northern third of the state where soils are sandy, naturally acid, and high in organic matter. (Figure 1).



Figure 1. Mature and ripening Blueberry berries at a blueberry orchard in Tippecanoe County on July 9th.
Photo: Zihan Hong.

However, wherever there are delicious fruits, there are also fruit pests: the Spotted-wing *Drosophila* (SWD) is an invasive vinegar fly that was first detected in the contiguous United States in 2008 and in Indiana in 2012. SWD is one of the most important insect pests to manage in blueberry systems; however, it is also a pest of other small fruits, including raspberries, blackberries, strawberries, cherries, and grapes. Female SWD are unique in that they have a serrated egg-laying organ (ovipositor) (Figure 2), which allows them to cut healthy fruits to lay their eggs. Infested fruits may appear normal and healthy initially, but over time berries will shrink and deform as larvae eat the fruit pulp, eventually causing the berry to collapse.



Figure 2. A 55X-magnified image of the serrated egg-laying organ (ovipositor) of the female Spotted-wing *Drosophila*. Photo: Zihan Hong.

With the help of collaborating blueberry growers, we placed SWD monitoring traps in three counties in Indiana during the week of May 10th to track SWD seasonal activity and abundance this year (Figure 3).



Figure 3. Master's student, Zihan (Lilac) Hong, and Dr. Elizabeth Long at the annual Blueberry Growers of Indiana Meeting in June 2021.

SWD monitoring traps (Figure 4) help growers determine when SWD first appear in fruit plantings, as well as how population numbers grow and change over time. SWD monitoring traps, like the commercial Scentry trap, consist of two parts: an attractive bait that draws adult flies into the trap and a drowning solution that collects captured flies. Once adult flies enter, they cannot escape and eventually fall into the drowning solution at the bottom of the trap. A commonly used bait is apple cider vinegar, which is readily available, inexpensive, and both attracts and drowns SWD adults.

These kinds of traps are useful early detection tools when placed in small fruit plantings before berries begin to ripen and can be left in place throughout the production season. To determine if SWD is present and whether the population is growing over time, the drowning solution should be collected weekly and examined with a

microscope or magnifying glass to confirm presence of SWD. The current recommendation for SWD management in small fruit systems is to begin insecticide applications when one SWD adult is detected in a monitoring trap and fruits are in the ripening stage.

Our first SWD detection in 2021 occurred on June 25th, and the highest number of SWD adults detected in a trap so far is 43, collected on July 6th. We will keep monitoring blueberry orchards for this invasive insect pest, and in the meantime you can track the most up-to-date SWD trap captures at the [Long Horticultural IPM Lab website](#).



Figure 4. A commercial Scentry Spotted-wing Drosophila trap in the field, with many small flies attracted to the side of the trap. Photo: Zihan Hong.

To further understand SWD seasonal activity, growers can track degree days to predict SWD development based on daily high and low temperatures. Because insect development is temperature dependent, progress from one life stage to the next (for example, the pupa stage to the adult stage) varies depending on daily temperatures. Degree days can be a precise and reliable tool to predict insect pest activity, but a variety of factors, including temperature, humidity, and crop variety, can impact its

accuracy. We are working on a SWD degree-day model developed specifically for Indiana blueberry-producing regions, which has the potential to improve the efficacy and timing of IPM strategies against SWD for blueberry growers in our state. We also want to uncover potential relationships between SWD infestation and blueberry qualities, such as variety, sweetness, and firmness.

Pesticide Product Registration: Draft Human Health and/or Ecological Risk Assessments for Several Pesticides, including chlorothalonil and tebuconazole

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

Pesticide Product Registration: Draft Human Health and/or Ecological Risk Assessments for Several Pesticides, including chlorothalonil and tebuconazole.

<https://www.regulations.gov/document/EPA-HQ-OPP-2011-0840-0035>

This notice announces the availability of EPA's draft human health and/or ecological risk assessments for the registration review of chlormequat chloride, chlorothalonil and tebuconazole.

Dates

Comments must be received on or before July 20, 2021.

Addresses

Submit your comments to

<https://www.regulations.gov/commenton/EPA-HQ-OPP-2011-0840-0035>.

◦ *Mail:* OPP Docket, Environmental Protection

Agency Docket Center (EPA/DC), (28221T),
1200 Pennsylvania Ave. NW, Washington,
DC 20460-0001.

- *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at <http://www.epa.gov/dockets/contacts.html>.

Additional instructions on commenting or visiting the docket, along with more information about dockets generally, are available at <http://www.epa.gov/dockets>.

Indiana Horticultural Society Field Day, July 27 2021

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

Indiana Horticultural Society Field Day, July 27
2021

Hosted by:

Wea Creek Orchard
618 South 200 East
Lafayette, IN 47909

The morning schedule is focused on soil health and is organized by the Pence Agronomy Group. The afternoon session concentrates on fruit (and pumpkins).

Growers are welcome to attend all parts of the program of interest to them.

Participants will also have the opportunity to pay their Indiana Horticultural Society membership dues (\$30) since we didn't meet for the Hort Conference this year.

Wea Creek Orchard

Wea Creek Orchard was established by The Kirkham family in 2008 on land that has been in the family since 1855. During that time, 7 generations of their family have raised sheep, cattle, pigs and now apples, peaches and

pumpkins on the land.

The first tree planting at the farm was 340 apple trees and 60 peach trees. Since that initial planting in 2008, they have added about 200 trees every other year. They currently have about 5 acres of apples, 1 acre of peaches and 12 acres of pumpkins (and about 40 sweet cherry trees). All the produce is sold at the farm, through U-pick and a market in an old bank barn on the property. One of the successful new additions have been sunflowers sold for \$1/stalk at the farm.

Hosting events such as festivals and weddings has become an important part of the farm business. The Kirkhams have also been involved in farm to school initiatives.

More information available at:

<https://www.weacreekorchard.com>

Indiana Hort Society Summer Meeting **Pence Group Soil Health Academy (morning)**

8:00 – 8:30 am – Sign in, Coffee truck, mingle

8:30 am – Welcome & Beginning announcements

9:00 am – 9:45 am – 1st Station – Dale Strickler, GreenCover Agronomist – Soil Health w/ Cover Crops

10:00 am – 10:45 am – 2nd Station – Joe Rorick, Conservation Agronomist & Angie Miller – Rural Conservationist – Soil Assessment, Watershed and Government programs

11:00 am – 11:45 am – 3rd Station – Micheal McNeill, PhD – Soil Health as it pertains to Human Health

Noon – 1:00 pm – Lunch

12:30 – 1:00 pm Transitional Remarks/Soil Health Academy Farm Tour

Indiana Horticultural Society

1:00 – 1:30 pm Welcome – Thomas Roney, president, Indiana Horticultural Society

Welcome – Linda Prokopy,

head of Dept. of Horticulture and Landscape
Architecture

Preview of the Indiana
Horticultural Conference – Petrus Langenhoven

Intro to the farm – Perry
Kirkham

1:30 – 1:50 pm Managing for healthy soil
and plant microbiomes – Lori Hoagland

2:00 – 2:20 pm Pumpkins and weed
management. Liz Maynard and Stephen Meyers

2:30 – 2:50 pm Pollinators and pollination –
Christian Krupke and Khalil Jahed

3:00 – 3:20 pm Break – ice-cream available

3:30 – 3:50 pm Best practices for social
media – Ariana Torres

4:00 – 4:20 pm Young tree management –
Tristand Tucker

4:30 – 4:50 pm Apple orchard systems –

Peter Hirst

5:00 –

Informal networking

Small Farm Education Field Day July 29th, 2021 at the Purdue Student Farm

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



Small Farm Education Field Day July 29th, 2021
at the Purdue Student Farm.

Small Farm Education Field Day Webinar Series
August 2, 4, 6, 9, 11, 13, 2021.

REGISTER TODAY:

<https://www.purdue.edu/hla/sites/studentfarm/events/>

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