

FANCY FRUIT

Issue: 24-06
June 6, 2024

A Newsletter for Commercial and Advanced Amateur fruit growers.

In This Issue

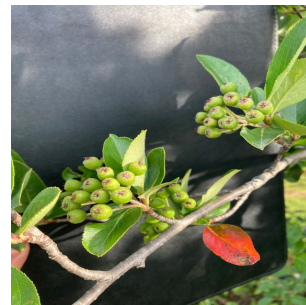
- Crop conditions
- Welcome meteorological summer!
- Do June-bearing Strawberries still Harvest in June?
- Leafhopper and plant bug damage in orchards this season
- Grapevine Canopy Management
- Purdue Fruit & Veg field day
- Purdue Small Farm Education Field Day

Crop conditions

(Chloe Rose Henscheid, richa267@purdue.edu) & (Wil Brown-Grimm, wbrowngr@purdue.edu)



Apple (Rosalee): Fruit Development



Aronia: Fruit Development



Pear: Fruit Development



Apple (Pixie Crunch): Fruit Development



Grapes: Buckshot Berries



Blackberry: Green Fruit

Welcome meteorological summer!

(Austin Pearson, pearsona@purdue.edu)

Happy meteorological summer, everyone! Whether you're ready or not, summer is here...well, at least meteorologically. While the official start of summer according to the astronomical calendar is the summer solstice on Thursday, June 20, meteorological summer began on June 1. This distinction is important because meteorological seasons are based on annual temperature cycles and divide the year into four equal parts, allowing climatologists to compare data over consistent time periods each year. Meteorological summer includes the months of June, July, and August.

May concluded with a preliminary average temperature of 66.5°F for Indiana, which is 4°F above the normal average. Statewide, average temperatures ranged from 2°F to over 6°F above normal (Figure 1). SHOALS 8S, located in Martin County, recorded the highest deviation, averaging 6.5°F above normal with an average temperature of 71.7°F, making it the warmest location in the state by 0.8°F. PATOKA LAKE in Dubois County recorded the highest maximum temperature for May in the state on May 20, with a high of 94°F (only considered stations with 100% data reporting).

Indiana's preliminary precipitation total for May was nearly normal, averaging 4.92 inches statewide, just 0.14 inches above normal. Precipitation varied widely, with areas receiving between 75 percent and over 125 percent of normal totals (Figure 2). NEWBURGH 1.3 ENE in Warrick County recorded the highest precipitation in May, measuring 9.12 inches. DE MOTTE 0.8 NNW in Jasper County, measured 4.44 inches on May 21, the second highest daily total for that station since 2008 (only considered stations with 100% data reporting).



Black Currant: Green fruit to ripe fruit



Field Strawberries: Still harvesting



Peach: Fruit Development



Plum: Fruit Development



Paw Paw: Fruit Development

Since the beginning of June (June 1-4), temperatures have been around normal, while precipitation has been below normal for most of north-central Indiana. These recent conditions have allowed producers to catch up on field activities. As of June 2, the USDA NASS Crop Weather Report indicated that 87 percent of corn and 81 percent of soybeans have been planted, both of which are above their respective 5-year averages. Due to the above-normal temperatures, growing degree days (GDDs) have continued to track above normal since April 1 (Figure 3). GDD accumulations ranged from 300 to over 650 units across the state, which was 40 to 150 GDDs ahead of schedule.

Looking ahead, temperatures are expected to be pleasant over the coming days, ranging from the 70s to 80s, with slight chances of scattered precipitation. The Climate Prediction Center (CPC) expects below-normal temperatures and slightly below-normal precipitation from June 10-14. Towards the middle of the month, the CPC continues to predict below-normal temperatures and near-normal to below-normal precipitation.

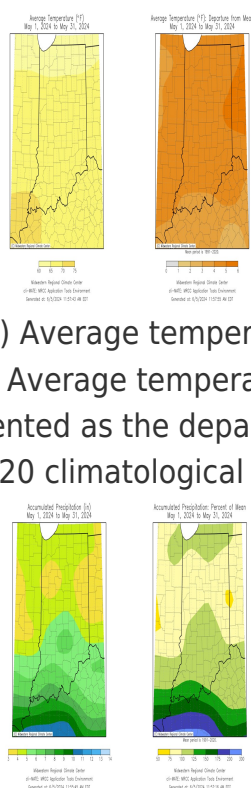


Figure 1: (Left) Average temperatures for May 2024. (Right) Average temperatures for May 2024, represented as the departure from the 1991-2020 climatological average.

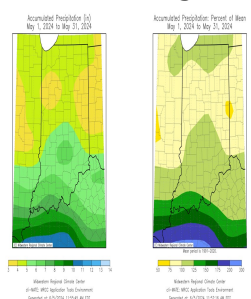


Figure 2: (Left) Precipitation accumulations for May 2024. (Right) Precipitation accumulations for May 2024, represented as the percent of the 1991-2020 climatological average.

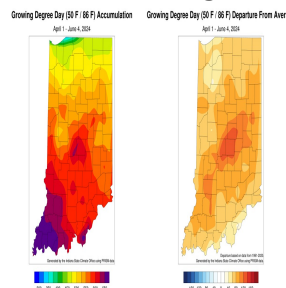


Figure 3: (Left) GDD accumulations from April 1-June 4, 2024. (Right) GDD accumulations from April 1-June 4, 2024, represented as the departure from the 1991-2020 climatological average.

Do June-bearing Strawberries still Harvest in June?

(Wenjing Guan, guan40@purdue.edu)

This year, the strawberry season throughout Indiana seems to be early by about 10 days to 2 weeks, regardless of the production system. In southern Indiana, I heard the harvest lasted from mid/late April until mid-May in some fields. In central Indiana, the harvest started in mid-May and is nearing its end in early June. I was asked why the season started early, and here are my thoughts.

First, we experienced several hot days in April and May, with temperatures exceeding 80°F and even reaching 90°F on some days in southern Indiana. These high temperatures stimulate fruit ripening. Typically, it takes about 30 days from anthesis to harvest, but under such high temperatures, the process can be shortened to 25 days or less.

The second reason for the early strawberry season could be the generally warm winter, especially the warm days in February, which

might have caused the strawberries to wake up earlier in the spring.

In addition to weather conditions, planting strawberries on black plastic-covered beds, along with using floating row covers instead of straw for winter production, also enhances early harvest.

Lastly, as far as I am aware, most fields did not experience major frost or freeze events that caused significant damage to strawberry blooms this year. As a result, most early blooms were able to set fruit, which may also contribute to the early harvest.

Will early strawberry harvests become a new trend? This will largely depend on the weather. In recent years, we've seen longer warm periods in the fall and milder winters, which could lead to more early blooming. However, whether these early blooms will result in an early harvest will depend significantly on whether we have frost/freeze events during the bloom period and our ability to protect the flowers from these weather events.

Leafhopper and plant bug damage in orchards this season

(Elizabeth Yim Long, long132@purdue.edu)

Hi fruit growers! Hopefully the season is going well for all of you. I am hearing from several folks that fruit development is ahead of where it was this time last year, and maybe that's why I'm also getting a lot of questions about 'unusual' damage to the *leaves and fruits* of caneberries, apples, and peaches, which I believe to be caused by sap-feeding insects like leafhoppers and plant bugs. So, here's a quick overview of signs and symptoms you can be on the lookout for in your orchard/berry patch!

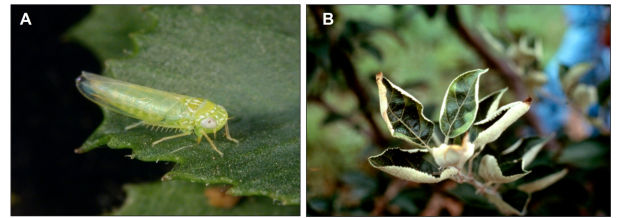


Figure 1. Adult potato leafhopper (A) Photo: J. Obermeyer, and symptoms of leafhopper feeding on apple leaves (B) Photo: Mid-Atlantic Orchard Monitoring Guide

Many of you are likely familiar with leafhoppers – there are many different kinds of these insects that differ in size and color. Some common ones in the orchard include the white apple leafhopper and potato leafhopper (Figure 1A). They have a characteristic jumping or hopping behavior, and if you happen to disturb leaves where many adults are resting, they will seem to “burst” out and fly away – a key sign of hopper activity. As with most insects though, only the adults have wings, so nymphs (immature stage) will often stay on the leaves/plant crawling about quickly and trying to avoid your eye. The nymphs can be very small though and blend in well with the leaves, so you've got to look carefully and closely. Some planthoppers inject toxins into plants when they feed with their straw-like mouthparts, and this may cause yellowing, shriveling, or curling of the foliage (Figure 1B). For most, this is the key symptom of planthopper injury that you will spot in the orchard. Some may also see “hopper burn” which presents as yellowing on just the tips of foliage. In my experience, these yellowing symptoms are often most apparent along the edges of the fruit plantings or your orchard, especially when populations are high. However, some of you may see this injury but find no insects present! Well, that's because leafhoppers are very mobile insects that can fly well, and given their small size, they can also be assisted in their movement by the wind. So, boiling all this down to what you need to know: we often see symptoms of planthopper injury after the insects have already

moved through. This means, by the time you notice injury, the planthoppers may be long gone. Although the foliage may look rough and leaves may even be dropped, the good news is that most healthy, established plants and trees will recover from this feeding injury.

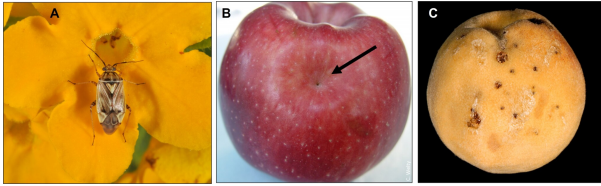


Figure 2. Adult tarnished plant bug (A) Photo: John Obermeyer, symptoms of “funnel” feeding damage on apple (B) Photo: Celeste Welty, and “corky” scar damage on peach (C) Photo: New York State Ag Experiment Station.

Another insect group that I’m hearing a bit about this season are plant bugs, and similar to the leafhoppers, there are many different kinds of these insects and they feed on lots of different plants. One plant bug that many of you are likely familiar with in the orchard is the tarnished plant bug (Figure 2A). Although these insects also feed on buds and woody tissue, most of the questions I’ve received this season are about injury to developing fruits. Key symptoms of plant bug feeding on fruit are funnel-like depressions (Figure 2B) or “cat-facing” injury on pome fruit, and “corky” scars (Figure 2C) on stone fruit. It can be tricky to diagnose plant bug injury though because there are other insects with similar feeding strategies that many of us think of first, like stink bugs! However, you may be more likely to spot plant bugs than leafhoppers, as they are larger and don’t move quite as quickly. Although it’s too late to act now if you see this injury, hopefully you’ll be more confident in guessing who the responsible insect might be in the future, based on the symptoms of injury.

Whether it’s leafhoppers, plant bugs, or another sap-feeding insect entirely, you can always submit photos and physical samples of foliage, stems, and fruits to the [Purdue Plant and Pest](#)

[Diagnostic Lab](#) for help with identification, and I’ll be ready to take a look when you do!

Grapevine Canopy Management

(Miranda Purcell, mrpurcel@purdue.edu)

Shoot Thinning

The optimum shoot density is 5-6 shoots per foot of row. Thinning to this density can help reduce shading, adjust the crop, lower the risk of disease and improve spray penetration. The optimal time for shoot thinning is before the shoots reach 12 inches. Removing the shoots may be more difficult once they’ve reached this point, so the use of pruners may be required to remove shoots.

Shoot Positioning

In high cordon-trained systems, shoot positioning and pulling shoots off the tops of the rows can help improve sunlight exposure to the leaves at the base of the shoots. These basal nodes will be retained at pruning and will provide next year’s crop; increasing sun exposure has been shown to improve bud fruitfulness as well as cane hardiness. These practices may need to be done multiple times throughout the season.

Leaf Removal

Cluster zone leaf removal can lower risk of disease, increase spray penetration and even improve fruit quality. The period immediately after bloom to 3 weeks post-bloom is the most effective time for leaf removal. Leaf pulling after this time can increase the risk of sunburn, especially on the west side of the canopy. Many growers only leaf pull on the east side of the canopy (on north-south rows) to avoid this. The removal of the basal 3-5 leaves in the cluster

zone can reduce the risk of bunch rots, especially in tight clustered varieties such as Vignoles, Seyval and Chardonel. Increasing sun makes the berries less susceptible to disease and allows for rapid drying after rain or dew. Leaf removal can also improve fruit quality in aromatic varieties, such as Traminette, and can improve anthocyanin development in red varieties.

Cluster Thinning

Cluster thinning is recommended on large clustered varieties. On average, each shoot should only have one or two clusters on it. You will want to remove clusters on any short and/or weak shoots as well. The best timing for cluster thinning wine grapes is after bloom and fruit set. Cluster thinning prior to bloom can result in compact clusters prone to disease.

Purdue Fruit & Veg field day

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

Purdue Fruit & Veg field day REGISTRATION NOW OPEN!

Register here: [Purdue Fruit and Vegetable Field Day](#)

2024 presentations:

- Trap Crop System for Multi-generational Control of Flea Beetles in High Tunnel Brassica crops
- Pollinators in High Tunnels vs. Open Field Production
- Evaluating the Impacts of Insect-Derived Soil Amendments on Crop Production
- Impact of Soil Fertility Amendments and Cover Cropping on Soil Health and Pepper Production
- A Comparison of Silage Tarping and Herbicides for Weed Control in Potato
- Evaluating the Use of Lasers as a Bird Control Strategy in the Vineyard
- Exploring the Use of Herbicide-Impregnated

Fertilizer for Improved Crop Tolerance in Pumpkin

- Modern apple orchard systems for commercial and backyard growers

Purdue Extension presented its second Fruit and Vegetable Field Day post-pandemic at the Throckmorton Purdue Agriculture Center's Meigs Horticulture Research Farm, located in Lafayette, on July 20th, 2023. Extension Specialists and Graduate Students presented specialty crop research to 90 attendees. Attendees had only good things to say about the event. 'It was an interesting program, I learned quite a bit.' "Excellent information and material." "Excellent information and resources on new horticultural technology and techniques." "Diversity of the tales, well explained and some topics never heard of before." "I learned new techniques and gained some new ideas for the future". As a result of the Fruit and Vegetable Field Day, 96% of survey respondents indicated (agree or strongly agree) that they learned something they didn't know before, nearly half indicated they plan to adopt practices for horticulture and the environment (41%), and a third plan to adopt practices that increased yields (36%) and conserve resources (32%). Nearly three-quarters of past field day participants (71%) indicated that they had adopted new, recommended practices for their farm or operation. When asked what new practice they had adopted, participants responded: alteration of insect control program, refrain from using pesticides in high tunnels, and new ideas of types of trees to plant. All of the participants (100%) reported that they had experienced financial improvements because of adopting new, recommended practices from information presented at past field days.

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)

July 25, 2024 Purdue Small Farm Education Field Day REGISTRATION NOW OPEN!

Attendees, exhibitors, and sponsors register here: [Purdue Small Farm Education Field Day](#)

2024 presentations:

- Insect dynamics in HTs
- Companion Plants and Syrphid Fly Recruitment
- High Tunnel Table Grapes
- Advantages and Considerations of Raised Bed Gardening
- High Tunnel Sweet Pepper Production Strategies and Variety Selection
- Tarps, fire, and cultivation- weed management updates and demonstrations.
- Strawberry production and strawberry propagation at small farms
- Soil moisture sensors
- Growing Open-Pollinated Corn on the Small Farm
- Postharvest Wash/Pack Design for Small Farms

The 2023 [Purdue Small Farm Education Field Day](#) was held at the Purdue Student Farm in West Lafayette, Indiana. With 105 participants registered, the in-person event featured an array of on-farm demonstrations and was a resounding

success.

Nearly 84% of attendees reported that they learned something they didn't know before. A third (34%) indicated they plan to adopt recommended practices for diversified farming systems, and a quarter (24%) plan to adopt recommended practices for creating, improving, or strengthening their business. Nearly half (45%) indicated they plan to adopt practices for horticulture and the environment or practices that will increase efficiency (42%). Over a third plan to adopt practices/technologies for the conservation of resources (37%). Nearly half (46%) of past field day attendees indicated that they had adopted new, recommended practices for their farm or operation. When asked what new practice they had adopted, participants responded:

- Alternate BT and Spinosad on brassicas.
- Pest scouting.
- Applied BT for brassica caterpillar complex control.
- Integrated pest management

Over three-quarters (80%) of participants reported that they had experienced financial improvements because of adopting new, recommended practices from the information presented at past field days.

Attendees commented

- "I recommend this event to any beginner small-scale producer.
- I brought my sons and my father to this event. It was a family education day for sure, and each one of us learned several things we didn't know. Please continue to offer these events. It's very helpful!
- Good information and a fun, interesting presentation
- I like the wide variety of topics, and I think

that so much could be covered in such a short amount of time.

- Lots of helpful information covering a wide variety of topics.
- Always learn, gain knowledge, and learn from questions others ask. When I get home, I can read the literature provided and share it with family in Virginia who farm.
- Very informative and builds on previous research.
- Everyone should learn about these topics.
- It was a good way to be exposed to a variety of horticultural crops.
- I am just beginning to develop my vegetable garden. The information given at the Field Day program was very useful, and I am confident I will create a beautiful garden space with plants that will give me a great yield. Also, I appreciate learning what insects I should keep an eye on.”

The event featured an array of “demonstration stations” on the farm where participants learned about a variety of topics:

- High Tunnel Pepper Production and Variety Selection

- High Tunnel Table Grape Production
- Silage Tarps and Their Potential Uses on Small Farms
- Growing Grains on the Small Farm – Dry Edible Bean Variety Trial
- Predator-Prey Dynamics in High Tunnel Crop Production
- Biorational Pesticide Efficacy for Controlling Caterpillars and Flea Beetles in Crucifer Crop Production
- Black Soldier Fly Composting and Specialty Crop Production
- Raised Garden Beds for Vegetable Production
- Postharvest Food Safety Demonstration
- Choosing Fertilizer Injectors for Drip Irrigation for Small Plots

To learn more about the field day, visit our webpage at www.purdue.edu/hla/sites/studentfarm/events/ or contact [Lori Jolly-Brown](#) or [Petrus Langenhoven](#).



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.

Facts for Fancy Fruit © Purdue University - fff.hort.purdue.edu

Editor: Peter M Hirst | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall
Dr., West Lafayette, IN 47907 | (765) 494-1323