

FANCY FRUIT

Issue: 24-04
May 9, 2024

A Newsletter for Commercial and Advanced Amateur fruit growers.

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Crop Conditions

(Chloe Rose Henscheid, richa267@purdue.edu)

All of our fruit trees at the Meigs Horticulture Facility have a lot of fruit despite the late frosts we had this spring. We have been busy applying our cover sprays and even had to thin our Apples. We will also have a lot of Strawberries this year, they are starting to turn red this week with a lot of flowers still coming on.



Aronia: Bloom



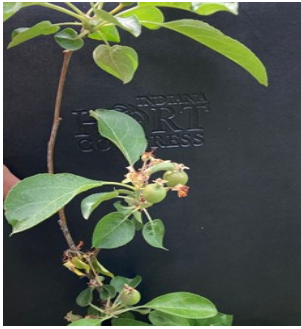
Blackberry: Bloom



Black Currant: Fruit Development



Grapes: Immediate Prebloom



Apple (Pixie Crunch): Fruit Development



Plums: Fruit Set



Peaches



Apple (Rosalee): Fruit Development



Pears: Fruit Development



Paw Paw: Full Flower



Field strawberries: fruit set

Indiana is Drought Free, but Long-Term Precipitation Deficits Remain

(Jacob Dolinger, jdolinge@purdue.edu)

Abundant rainfall has eliminated any drought across the Hoosier State, and we have April showers to thank for that. Fort Wayne had its wettest April on record with a whopping 7.39 inches of precipitation, over 3 inches above the normal 3.74 inches for April. In Indianapolis, it was the 8th wettest April on record with 7.77 inches, and in Frankfort, it was the 2nd wettest with 7.99 inches. 30-day precipitation departures reveal above normal precipitation for just about the entire state (Figure 1).

90-day precipitation departures tell a different story, with parts of southern Indiana up to 3 inches below normal (Figure 2). Even more significant are the 1-year departures, with most of the state anywhere from 4 to 12 inches below normal (Figure 3). Indiana will continue to need consistent precipitation to maintain the short-term recovery seen so far this Spring. The

National Weather Service’s Climate Prediction Center (CPC) has forecasted near normal precipitation for most of the state for May 15-21, leaning above normal for southern Indiana. Through May 31, the outlook is for above normal precipitation for solely southern Indiana and near normal elsewhere. In total, the Weather Prediction Center (WPC) expects 0.5-1 inch of rain for most of Indiana through May 16.

In the agricultural growth department, Indiana is above normal. Much of central and southern Indiana are now well above normal when it comes to Modified Growing Degree Data accumulations (Figure 4). Since more precipitation is expected—and above normal temperatures are expected through at least May 17, according to the CPC—expect MGDD accumulations to climb more in the coming weeks.

Figure 3-1 year precip totals

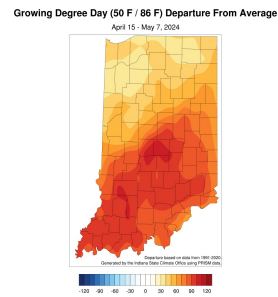


Figure 4- GDD ABOVE NORMAL APRIL 15-MAY7

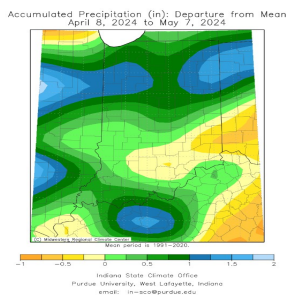


Figure 1- 30-day Precip. Departures for Indiana

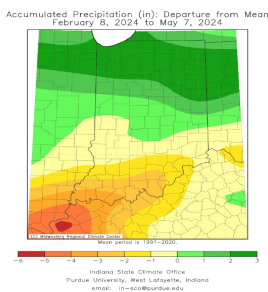
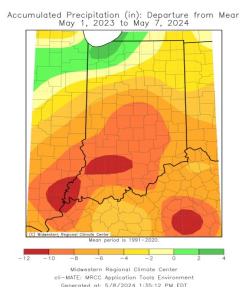


Figure 2 Average Minimum Temp Departure from Mean April 22, 2024 to April 30, 2024



Scab management

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

Leaving behind the fourth or fifth wettest April, rains continue in May. Many growers are confronted with serious issues with respect to scab management. Depending where you are in the state, development is at anywhere from petal fall to 2nd cover (kings at 10-11mm) or even further along. Against some pretty grim probabilities, most of the state managed to not suffer a freeze and hopefully everyone was able to protect their crop.

If our weather remains cool and wet, any scab that became established during April will continue to spread during summer, increasing the potential for late-season fruit infections. What is a grower to do? As we all know, apple scab is best managed preventatively. Unfortunately, the weather has prevented this best management practice. In the northern part of the state, which is anywhere from tight cluster to first cover, Inspire Super at the highest labeled rate with mancozeb or captan for two sprays will protect against scab, along with rust (Inspire is less effective on mildew, although with all this rain mildew is unlikely to be a problem). Inspire Super contains Vanguard as a tank-mix partner, taking the fungicide resistance pressure off SI

component (difenoconazole) for any infection events that occurred within 72 hr prior to the application. For growers searching for a different option, as long as temperatures remain below 70, Scala or Vanguard alone can provide up to 72 hr of reach-back activity if applied before bloom, but Scala and Vanguard have almost no value for stopping scab if infections have more than a 72-hr head start and they do not redistribute well to protect new growth. A final option, for growers with no history of dodine resistance, is Syllit. Keep in mind that these fungicides (Scala, Vanguard, Syllit) should be used in combinations with mancozeb or captan both for resistance management and to prevent total disaster if the block has more dodine-resistant scab than expected. This will be an expensive spray, but well worth the investment. Any breakthrough scab should be deactivated, thereby preventing secondary infections from occurring. When using any fungicide as a rescue treatment, always use the highest labeled rate allowable.

In the southern part of the state, which is at 1st to 3rd cover, the most critical time of scab control has actually passed (apple scab generally remains a threat for at least three weeks after petal fall). The ascospores may not be shooting, but with all the rains the previous 2 weeks, and skepticism that we would even have a crop, it is unlikely that anyone approached 100 percent control of primary scab, under perfect scab-infection conditions. Any remaining ascospores more than likely managed to infect those rapidly growing terminal shoots and young, succulent leaves. Orchards that are carefully scouted three weeks after petal fall and do not show scab are unlikely to develop severe scab problems later in the season—Except, our cool wet spring and almost 2 weeks of heavy rain has probably added at least 7-10 more days to that three week cut-off. Even though many of you are three weeks past petal fall, keep on the look out for scab.

Remember that after petal fall, captan used at full rates will be the most effective way to keep scab off of fruit if any infections become established on leaves. As a bonus, it's great against bitter rot, too!

Keep in mind that the scab risk doesn't disappear until we get some hot, dry weather. Secondary scab conidia production drops off rapidly after several days of mid-80 degree temperatures. Furthermore, conidia viability is reduced with increasing temperatures, minimizing the risk of infection as well.

Rescue: When to implement a rescue treatment

For the purposes herein, rescue treatments are those applications of fungicides that are needed after an excessive rain event, or in the case of intermittent rains early in the season that promote scab infection, but not enough rainfall for redistribution of mancozeb or captan to prevent infection. Normally, we recommend that fungicides for rescue treatment should never be applied if excessive scab is present in the field, nor should the eradicator "kick back" fungicides (SI's, strobilurins, dodine) should be applied once sporulating lesions are found in the orchard as this will rapidly promote the development of resistance.

However, doing nothing isn't a very good option. Furthermore, these applications of rescue treatment fungicides will protect newer infections from developing, although you may be driving resistance by applying fungicides to already sporulating lesions. This will reduce the incidence of lesions this year, but possibly select for fungicide resistance in those late, already sporulating lesions. For those in the southern part of the state, keep in mind that the newer SI fungicides do not work as well against fruit infections compared to leaf infections.

Although strobilurin resistance is not widespread

in Indiana, the use of strobilurins would not be recommended as they have even more limited “kick back” activity than the DMIs. This leaves many growers with two choices: Inspire Super or Syllit.

Although exact numbers are unknown, the number of rescue treatments a grower has is finite, with between four to six rescue treatments estimated with the newer SI fungicides (difenoconazole, Inspire Super and fenbuconazole, Indar) before even they will no longer work in an orchard with fungicide-resistant scab. The newer, ‘Second Generation’ of SI’s are much more active against scab, and have been shown to control scab that is resistant to Rally/Nova and Vintage/Rubigan in some (but not all) experimental orchards with high population of SI-resistant scab. In those orchards without a history of dodine (Syllit) resistance, dodine can be used to “burn out” existing lesions. Our research in Indiana has found that approximately 35% of the isolates tested possessed varying degrees of dodine resistance, from reduced efficacy to full resistance, but that resistance to dodine was much lower than resistance to Rally. Finally, Yoder et al. (2009) found Syllit, Indar and Pristine all significantly reduced scab incidence when first applied three weeks after the first scab lesions were observed, however the level of fungicide resistance in this orchard was expected to be minimal at the time of application.

When applying a rescue treatment, fungicides should be applied as soon as entry into the orchard is possible, and best results will occur if fungicides are applied no later than 72 hours after the start of an infection period. For Inspire Super and Syllit, the sooner the spray is applied after the infection period, the more effective it will be. Fungicides applied in a post-infection program should be used at their highest recommended rates. Syllit (Dodine) has excellent

eradicant properties, if applied early in the season, and anecdotal evidence from growers suggests it is very effective later as well. Growers who are uncertain as to their orchard’s resistance status should use it in combinations with mancozeb or captan. Newer formulations of Syllit should minimize the risk of russetting on Goldens, and our own work last year did not identify any problems using captan and Syllit together. Apply at highest labeled rates to eradicate any early infections and combine with mancozeb or any strobilurin for resistance management. Post-infection sprays should be followed with a second application of the Syllit or Inspire Super + protectant (mancozeb or captan) approximately seven days later to make sure that scab lesions are completely killed (this assumes that dodine or SI resistance is not an issue).

It is important to note here that the curative or “kick-back” ability of strobilurins was never as effective as the SI fungicides. Thus, using Inspire Super (which field studies have regularly shown to have the best efficacy against apple scab), or Syllit for scab control is what I believe is the better option when one wishes to maximize activity against apple scab infections that might already be present in leaves.

One obvious problem with this spray program is that extended or severe rainfall can interfere with post-infection applications that must be made within 72 hours after the start of an infection period. Unfortunately, extended periods of rain are a problem with any fungicide program, as we have all just witnessed.

A final note: This is my last article for Facts for Fancy Fruit, as I will be retiring from Purdue May 12. I want to thank everyone for sharing their fruit growing path with me—I learned so much from all of you, and I hope you have learned something from me in return. I am so very

grateful that you let me into your orchards, vineyards, berry patches and lives, and shared with me the goodness of flowers, fruit and hope. So, thank you, and I hope we meet again!

Callisto® and Brambles- A Cautious Reminder

(Stephen Meyers, slmeyers@purdue.edu)

Mesotrione is a Group 27 (HPPD-inhibitor) herbicide. It is registered as a stand-alone active ingredient in products such as Callisto®, Argos®, and Tenacity® among several others. It is also a common ingredient in pre-mix corn herbicides such as Acuron, Calliso® GT, Optero®, Storen® and many others. Mesotrione has both pre-emergence and post-emergence activity on select broadleaf weeds and some grasses. Because mesotrione indirectly inhibits the production of carotenoids (a pigment in plant leaves), susceptible plants typically turn white. This “bleaching” injury is often followed by plant tissue death (necrosis).

Callisto has been labeled for blueberries for just under a decade, but the label was expanded in 2016 to include brambles. At that time, Dr. Bruce Bordelon applied 3 fl. oz. per acre of Callisto to the bramble plantings at the Meigs Horticulture Research Farm in Lafayette, IN and reported

significant damage on several varieties of blackberries and raspberries (Figures 1-4). The floricanes appeared to be more heavily damaged than primocanes, and in some cases, the damage was so severe that a complete loss of the summer crop was expected.

Since that time, additional research has confirmed Dr. Bordelon’s findings. Scientists in Arkansas (Knepp 2022) applied 4.5 or 9 fl. oz per acre of Callisto to greenhouse pots one day before transplanting ‘Ouachita’ blackberry plugs into them. Injury was reported by 7 days after treatment and increased progressively through the 42-day trial, resulting in 78 to 90% crop injury (on a scale where 0% is a completely healthy plant and 100% is a dead plant). Plants treated with mesotrione were shorter with shorter internodes, had fewer leaves, and less leaf chlorophyll. The same research group applied mesotrione to newly transplanted blackberry plugs in a field setting and reported that the plants were significantly damaged and did not fully recover, even by 84 days after treatment (Bertucci 2022).

The current label for Callisto restricts its use in cane berries and high bush blueberries to a post-directed spray prior to blooming. Post-directed applications generally target small, emerged weeds and the spray pattern is directed at the base of the crop with an effort to limit exposure of the crop to the spray. This can be difficult in caneberries depending upon the timing of primocane emergence and the presence of suckers. If you do decide to use Callisto for weed management in blackberries or raspberries, exercise caution.

References:

Bertucci, M. 2022. Evaluation of preemergent herbicides for newly planted blackberries. Southern Region Small Fruit Consortium Report. Available at [2022-R-06-progress.pdf](https://www.southernregionfruit.com/2022-R-06-progress.pdf)

(smallfruits.org) Accessed May 8, 2024.

Bordelon, B. 2016. Callisto herbicide injury in brambles. Facts for Fancy Fruit 16:4/ Available at [Callisto Herbicide Injury to Brambles | Purdue University Facts for Fancy Fruit](#) Accessed May 8, 2024.

Knepp, K. 2022. In-field and Greenhouse Assessments of Selection of Preemergence Herbicides on Newly Planted Blackberries. MS Thesis: University of Arkansas. Available at [In-Field and Greenhouse Assessments of a Selection of Preemergent Herbicides on Newly Planted Blackberries - ProQuest](#) Accessed May 8, 2024.



Normal thornless blackberry primocane growth.
Photo credit Bruce Bordelon



Mesotrione damage on Heritage red raspberry.
Photo credit Bruce Bordelon



Mesotrione damage on thornless blackberry floricanes. Photo credit Bruce Bordelon



Mesotrione damage on thornless blackberry floricanes. Photo credit Bruce Bordelon

Discussion with Dr. Marvin Pritts about Strawberry Production in the Northeast

(*Wenjing Guan, guan40@purdue.edu*) & (*Miranda Purcell, mrpurcel@purdue.edu*)

A new [episode](#) of the Strawberry Chat podcast is available. In this episode, we talked with Dr. Marvin Pritts from Cornell University. We discussed the new edition of the [Strawberry Production Guide for the Northeast, Midwest, and Eastern Canada](#). Dr. Marvin introduced us to the plasticulture day-neutral strawberry product system he has been researching recently. He also shared his previous research and thoughts on nutrient management, winter protection, fruit quality, and pollination. Dr. Marvin did most of the research at USDA Hardiness Zone 5b.

Search 'Strawberry Chat' on your podcast platform to find the program and listen to previous episodes, or click the link [here](#).

Why You Should Remove Old Leaves on Plasticulture Strawberries

(*Wenjing Guan, guan40@purdue.edu*)

Removing overwintering leaves on plasticulture strawberries in the early spring is a time-

consuming and labor-intensive job. I was asked whether the effort is worthwhile. I want to share my observation that confirms it is worth the effort.

We conducted a comparative study on second-year plasticulture strawberries at Southwest Purdue Ag Center in Vincennes, IN. In one row, we removed overwintering leaves and runners in February; in the other, we did not. Now at the time of harvest, we have observed noticeably higher botrytis pressure in the rows where the old leaves were not removed (Fig 1 and 2). Additionally, we noted significantly more sap beetle damage in the rows where berries were in contact with dead plant material (Fig 3). About 30-50% of the berries in these rows had cavities caused by the beetles, while the rows from which we had removed old leaves showed minimal damage. These observations emphasize the importance of cultural practices in controlling pests. For more information about sap beetles in strawberries, refer to [this](#) article.



Fig 1. The rows old leaves and runners were not removed in the early spring.

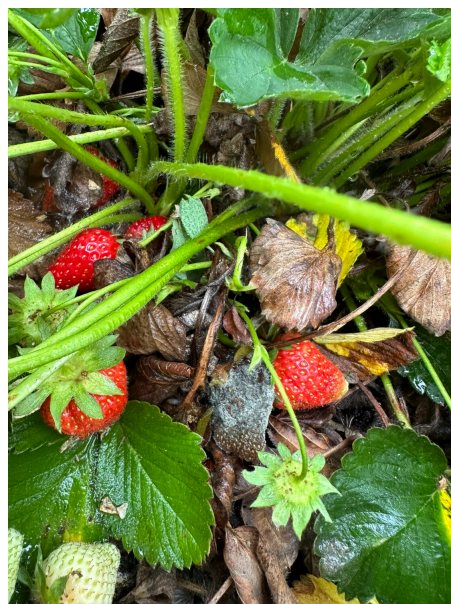


Fig. 2 Botrytis fruit rot on strawberries



Fig 3. Sap Beetle damage on strawberries

Strawberry sap beetles (*Stelidota geminata*)

(*Laura Ingwell, lingwell@purdue.edu*)

As we head into the strawberry season, I anticipate more questions from growers when it comes to pests that directly damage the fruit. One that was reported recently was the Strawberry sap beetle. This beetle belongs to the family Nitidulidae, which are broadly referred to as sap or picnic beetles. The Strawberry sap beetle overwinters in perennial vegetation,

mostly wooded areas. They move into the crop when ripe fruit becomes available. In general, this pest feeds on overripe or damaged fruit and therefore sanitation is the best strategy to manage this pest. It can be most difficult in you-pick operations where overripe fruit may be more common.

How do you recognize them?

Adults are going to be the first life stage present in the crop (Fig. 1). They are dusky brown in appearance, and about 1/8-1/4 inch long. They can be found feeding directly on the overripe or damaged fruit but often drop to the soil when disturbed. The adult females lay their eggs in the fruits themselves. Within 2-3 days the eggs hatch. Like all other beetles they go through complete metamorphosis, meaning egg-larvae-pupa-adult. The larval stage are small white 'grubs' with a brown head and can be up to 1/10 inch long, i.e. small and difficult to see. However, if you find a damaged fruit and open it up, they can be visible. We see another species commonly in sweetcorn ears where another insect (often corn earworm) has damaged the ear first.

What does their damage look like?

The most apparent and visible damage will be that caused by the adult beetle feeding and subsequent oviposition. The adults will create deep cavities or tunnels in overripe berries. Subsequent pathogen infections may occur because of this damage to the fruit.

How do you manage them?

As mentioned earlier, sanitation is the best strategy. Timely picking of ripe berries and removal of overripe and damaged fruit from the field will lessen the appeal of the crop to the beetles in the first place. Once they are present, there is a parasitic wasp that occurs naturally that helps to limit the population by reducing the number of eggs that are deposited by infected

females. If it is hard for you to maintain timely picking and a clean field, such as in you-pick operations, you can mitigate the infestation by trapping beetles around the perimeter of the crop, intercepting them as they migrate from their overwintering locations. This would include placing ripe-overripe berries in trap buckets outside the field borders as the crop itself begins to ripen. The trap buckets can intercept migrants and reduce numbers in the ripening crop. Discard the trap contents frequently (3-4 days) and refill with new bait. You can create your own trap or use a bucket trap from a commercial supplier (Fig. 2). The use of insecticides to manage this pest can be difficult because they occur during the harvest period, therefore strict adherence to the Restricted Entry Interval (REI) and Pre-harvest Interval (PHI) are important and can be challenging. According to the Midwest Fruit Production Guide novaluron and bifenthrin offer excellent control with an REI of 12 hrs and PHI of 0d or 1d respectively. Always follow the label on the product; the label is the law.



Figure 1: Strawberry sap beetle adults. Photo by Wenjing Guan.



Figure 2: Mock design of a sap beetle bucket trap.

OISC Pesticide Clean Sweep Dates, Times & Locations Announced

(Miranda Purcell, mrpurcel@purdue.edu)

2024 OISC Clean Sweep Pesticide Disposal

WHAT: An OISC Clean Sweep Pesticide Disposal Program designed to collect and dispose of suspended, canceled, banned, unusable, opened, unopened or just unwanted pesticides (herbicides, insecticides, rodenticides, fungicides, miticides, etc.) is being sponsored by the Office of Indiana State Chemist (OISC). This disposal service is free of charge up to 250 pounds per participant. Over 250 pounds there will be a \$3.00 per pound charge. This is a great opportunity for you to legally dispose of unwanted products at little or no cost.

WHO: All public and private schools, golf courses, nurseries, farmers, ag dealers, public, cities, towns, municipalities and county units of government or others receiving this notice are eligible to participate.

WHEN: 9:00 am to 2:00 pm Local Time

WHERE:

August 13, 2024: Keystone Cooperative - Porter County

210 East 400 South Valparaiso, Indiana 46383

August 14, 2024: NISWMD - Steuben County

2320 West 800 South Ashley, Indiana 46705

August 15, 2024: Becks Foundation Seed Facility - Tipton County

6159 West 550 North Sharpsville, Indiana 46068

August 20, 2024: Premier Ag - Daviess County

11815 US-50 Loogootee, Indiana 47553

August 21, 2024: Kova Fertilizer - Decatur County

1330 N. Anderson St. Greensburg, Indiana 47240

August 22, 2024: Hendricks County Fairgrounds

1900 E. Main St. Danville, Indiana 46122

HOW: Complete the Clean Sweep Pesticide Disposal Participant Form

(https://oisc.purdue.edu/pesticide/clean_sweep.html) to the best of your ability. Mail, fax or e-mail

the completed form to Nathan Davis at 765-494-4331 or

cleansweep@groups.purdue.edu no later than Fri., August 9, 2024. Questions may be directed to Nathan at 765-494-7108. Then bring your leak free and safe to transport containers to the collection site. DO NOT mix materials.

Empty pesticide containers will not be accepted, please follow label directions for proper disposal of empty pesticide containers

Bulk containers not documented on form will not be accepted

Tips for managing San Jose scale in tree fruit

(Elizabeth Yim Long, long132@purdue.edu)

San Jose scale attacks *all* the delicious fruit trees: apple, peach, pear, and plum. Some of you may already know that this insect is particularly difficult to manage, because most life stages are very small, even *tiny*, so they are not obvious until there are lots of them! In fact, you're going to need a legit hand lens or magnifying glass to see some of the life stages clearly. In this article, I'll try to cover the big picture things you need to be aware of to detect and protect your trees from San Jose scale.

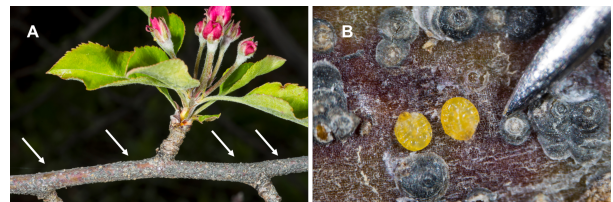


Figure 1. An apple branch infested with San Jose scales, which are denoted with white arrows (A) and a close-up image of the dark-colored, protective covering produced by scales, along with yellow, mature female scales that

have their protective scale covering removed. Photo credit: John Obermeyer.

Signs and symptoms. It may be difficult to catch San Jose scale infestations before they reach high levels because they are so small! But looking for signs and symptoms can help you detect this pest before the population gets out of control. Here's what you can look for, but take care to look closely and carefully:

A key *sign* of San Jose scale infestation is the presence of small, hardened, dark-colored bumps or "scabs" on tree twigs and branches (Figure 1A & B). The mature scales may be found on the tree from late July through early September, but note that multiple life stages may be present at the same time (more info below in the life cycle section). A key *symptom* of San Jose scale infestation that is particularly eye-catching is the presence of red, circular spots on fruit (Figure 2). These red spots are caused by toxins that the scale injects into plant tissue while feeding. Once you see symptoms of injury on fruit, the population is likely at a level that management is necessary to protect trees from decline caused by this insect pest.



Figure 2. An apple with diagnostic symptoms of San Jose scale feeding: red, circular spots caused by toxins injected by scales during feeding. Photo credit: G. Krawczyk

The life cycle of San Jose scale. This insect pest transitions through four stages during its development: 1) immature crawlers, which look like *tiny*, flattened-yellow disks, but note they are

active and mobile; 2) immature scales, which are fixed in place on the tree and are also the overwintering life stage; 3) adult males, which are free-living and look like tiny, delicate, gnat-like flies; and finally, 4) the mature scale, which is immobile and fixed to one spot on the tree; male scales are a bit smaller and more oblong than the female scale. You won't see eggs of this pest because female scales give live birth to offspring! There are typically two generations each year in our region and note that there may be overlapping generations during the growing season, which means you may detect free-flying adult males, immature crawlers, and the immature or mature scales, all at the same time in the orchard.

Monitoring strategies and Degree-day models for San Jose scale. The adult males (tiny gnat-like flies) can be monitored after they emerge using pheromone-baited sticky traps. These traps should be placed prior to bloom (anytime between 'tight cluster' and 'pink'), because adult males typically emerge to mate with immobile female scales around 'petal fall.' Once males are captured on pheromone-baited sticky cards, be on the lookout for immature crawlers 4-6 weeks later. Be sure to check the trap daily however, to make sure you know when the first male is captured. Monitoring traps are hung from a tree branch with a string or wire and males are captured on the sticky trap when they fly in to investigate the attractive pheromone odor. Traps can be purchased from Great Lakes IPM and there are ready-to-use [kits](#) available!

If pheromone-baited sticky cards are used in conjunction with the San Jose scale degree day (DD) model (calculated based on San Jose scale developmental temperature of 51 °F), you can use first capture of adult males on the traps to begin tracking degree days. Research indicates that ~300 DD₅₁ after the first males are captured,

you can begin monitoring for the tiny, yellow crawlers by placing a piece of black electrical tape (sticky side out) around branches that are infested with San Jose scale. Check the tape twice a week for the crawlers, and remember to have your hand lens or magnifying glass handy when you inspect the tape! The crawlers begin emerging between 380-400 DD₅₁ after adult males were first captured, and peak crawler activity is estimated to occur between 600-700 DD₅₁ after adult males were first captured. This is the best time to apply insecticides to combat crawlers in late spring, because they have not yet settled and developed the protective, waxy scale.

Best management strategies. Add biological control agents! If you know there are trees with San Jose scale infestations, a good cultural strategy is to prune out infested branches, which may also improve penetration of sprays into the canopy.

Next, dormant oil is your friend! Because San Jose scale overwinters as an immobile, immature scale on the tree, they can't move or evade early spring applications of dormant oil, which works by suffocating the immature scales. If you know there are certain areas or trees in your orchard that have a history of infestation by San Jose scale, make note or flag the trees, so you can be sure to apply dormant oil to these trees in the early spring. Research suggests that an application of dormant oil at 'green tip' is very effective against immature scales, BUT (and I know you've heard this a million times)

thorough coverage is critical (i.e., use high volumes of water) to see the best control. If you miss the window to apply dormant oil, you can apply insecticides to combat San Jose scale in the late spring (mentioned above), but know that mature scales are protected from insecticides by their waxy scale covering, so you must target

immature crawlers to reduce the population and infestation of fruit later in the season.

Last but not least, some may be wondering if there are natural enemies in the orchard that attack San Jose scale, and the answer is yes! There are tiny, parasitoid wasps that attack the immobile scales, laying their eggs inside, which hatch and eat the scale as the new parasitoid develops, eventually killing it. *Thank goodness we're not insects, right?!* If infestations are not severe, these parasitoids can provide effective biological control, but note they are sensitive to insecticides too, so try to avoid using broad-spectrum insecticides when you can to help keep these "good bugs" around.

This article was written in response to a reader request ☐! I hope it was helpful, and if you have suggestions for other fruit insect topics, you are welcome to email me: long132@purdue.edu

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](#)

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.

Below are some of the production topics presented at the field day. We expect to have a similar lineup for the 2024 field day.

- Black Soldier fly composting and specialty crop production
- Collard insect management trial
- High tunnel diversification and biological control
- Plasticulture strawberry research
- Silage tarps for weed management in potatoes
- Soil health and pepper yield
- Sweet corn pest management
- Unmanned aerial vehicle demonstration
- Watermelon weed management

We are happy to announce that Purdue Extension is presenting its annual Fruit and Vegetable Field

Day on July 18, 2024, at the Throckmorton/Meigs Horticulture Farm, Lafayette, IN.

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)

**Purdue Small Farm Education Field Day
REGISTRATION NOW OPEN!**

Attendees, exhibitors, and sponsors

register here: [Purdue Small Farm Education Field Day](#)

July 25, 2024

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

Educational topics for the 2024 field day will be available in May. To learn more about the field day, visit

our [webpage](http://www.purdue.edu/hla/sites/studentfarm/events/) at www.purdue.edu/hla/sites/studentfarm/events/ or contact [Lori Jolly-Brown](#) or [Petrus Langenhoven](#).



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