In This Issue

From The Editor's Desk

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)

Dear Valued Vegetable Crops Hotline Readers,

Welcome to this issue of the 2026 Vegetable Crops Hotline newsletter! Our mission remains steadfast: to deliver crucial updates on pest management, production practices, food safety, and marketing opportunities that directly impact your farming operations.

Growers and Purdue Extension Educators, your input and expertise make this newsletter a truly useful resource. If you have hot topics you'd like us to cover, success stories to share, or questions for our Extension specialists, please email Petrus langenhoven or reach out to the specialist directly. We also welcome high-quality photos of pest issues, unusual symptoms, or innovative production practices you've implemented on your farm.

What's Inside This Issue

This week's *Vegetable Crops Hotline* covers watermelon seedling loss due to cucumber beetle feeding, black soldier fly, a weather update, and a range of timely topics from past issues. Below are links to selected articles from past issues that are timely for this stage of the growing season.

Temperature Effects on Potassium Uptake: Managing Heat Stress for Better Tomato Quality

Planning for Fall and Winter Production in High Tunnels

Foliar Diseases of Tomato in Greenhouses

MELCAST

Preparing Vegetable Transplants for Indiana Field Conditions

Subscription Information

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Digital Subscribers

If you receive the newsletter via email, you do not need to take any action. You will continue to receive the newsletter on the issue date.

New digital subscribers can now register their email address

In addition, digital subscribers receive emails with information about articles or announcements that need your immediate attention. These articles will be posted under Hot Topics on the VCH webpage and will be included in the next issue. All previous articles published in the VCH newsletter are available on the Vegetable Crops Hotline website.

Website Links in Newsletter Articles

We frequently include links to websites or online publications. If you can't access these resources, don't hesitate to contact your local Purdue Extension office or us to request a hard copy of the information.

Midwest Vegetable Production Guide

The 2026 Midwest Vegetable Production guide is now available for growers, or you can download and print a guide from your computer. The guide is also available for $20 per copy. Contact your Extension Office or Stephen Meyers directly to buy a copy.

Midwest Vegetable Trial Reports

Are you still considering purchasing vegetable seeds? The Midwest Vegetable Trial Report features many articles to help you

make an informed decision. The resource also hosts production-related research results.

Best regards,

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The Black Soldier Fly

(Tucker Cade LaRue, laruet@purdue.edu) & *(Laura Ingwell, lingwell@purdue.edu, (765) 494-6167)*

Introduction

The black soldier fly (*Hermetia illucens*; BSF) is a species of fly in the Stratiomyidae, or soldier fly, family. They are an all black fly that has clear windows near the base of its abdomen that it uses to mimic wasps (Figure 1). BSF adults live for about 5-8 days, during which time they are focused on reproducing. They do not bite, sting, or transmit diseases. BSF are native to neotropical regions, including large areas of South America, the Caribbean, Mexico, and southern North America. However, at this point, they can be found on every continent except Antarctica.

Figure 1. Adult black soldier fly (Photo by John Obermeyer).

Decomposers

Black soldier flies are renowned for their decomposition abilities. As a true fly, they undergo complete metamorphosis: egg-larva-pupa-adult (Figure 2).

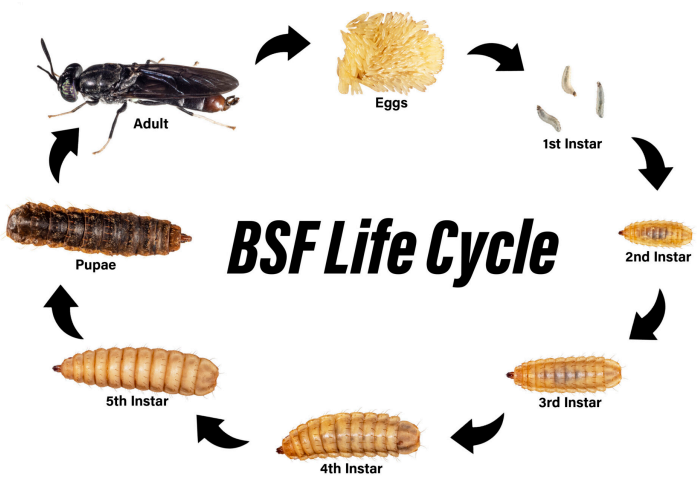

Figure 2. A diagram of the life cycle of Black Soldier Fly, depicting eggs, all five larval instars, pupa, and adults (Diagram by Bransen Shidler).

In the larval stage, they feed voraciously on organic waste, with many studies conducted across all continents to assess their applicability to agriculture and waste management. By our own calculations, a gram of BSF eggs (about a bottle cap full; Figure 3) will consume on average about 5 kilograms (~11 pounds) of organic waste throughout their larval development. Some outlying “colonies” of 1 gram of initial eggs BSF larvae that we have raised have consumed upwards of 25 kgs (~55lbs) in their lifetime.

Figure 3. One gram of Black Soldier Fly eggs in a soda bottle cap (left) and water bottle cap (right) (Photo by Laura Ingwell).

Black Soldier flies are opportunistic detritivores, meaning they primarily consume dead and rotting organic material. They aren’t exactly picky about where it comes from. Old vegetables and discarded cooking scraps are commonly fed to soldier flies, along with spoiled dairy products, pastries, pies, and anything else people have left sitting in the backs of their fridges (Figure 4). They are incredibly adventurous in their eating and won’t complain about what you give them!

Figure 4. Black Soldier Fly larvae consuming an apple in a compost bin (Photo by John Obermeyer).

Of course, the decomposition process wouldn't be this valuable or important if we didn't get something in return from these bugs, but thankfully, we do. Two of the most important byproducts we harvest from these flies are their frass (insect waste/excrement) and their exuviae (old exoskeletons and pupal cases). The frass from the larvae is incredibly nutrient-dense, especially high in nitrogen and phosphates, making it an excellent soil amendment or fertilizer. The exuviae are almost as beneficial as, if not more so than, the frass; however, with more than double the nitrogen content of the frass, this highlights just how useful both components can be.

Protein Substitutes

Finally, I'd like to tell you about the other major reason for the surge in interest in BSF production and its byproducts. That is, of course, their ability to be used as a feed ingredient for all types of animals. Typically, they are used for poultry, aquaculture, and pet food, but there have been some minor applications in pig and cow feeds as well. These little larvae are rich in protein, typically around 40-50% crude protein, with many other beneficial nutrients, such as calcium, fat, and all the essential amino acids.

Conclusions

While incorporating soldier flies into composting might seem a little disturbing and even scary, they are entirely harmless to humans and make the process easier and much quicker. They are ravenous eaters who are not picky about what you feed them, and in return will provide you with excellent natural fertilizer that is made up of the old food you didn't want. The only downside you might encounter with these fascinating insects (aside from their smell) is that they are eating the food you give them faster than you can get it to them!

Watermelon Plant Survival

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

We have experienced several cool days over the past two weeks. One watermelon trial at Southwest Purdue Ag Center was planted on May 4, and during the two days following transplanting, recorded air temperatures dropped below 50°F. We evaluated plant survival 9 days after transplanting.

In this trial, we had grafted and non-grafted seedless watermelons and non-grafted pollenizer plants. The majority of the plant loss occurred on the non-grafted pollenizer plant, with approximately 18% mortality. Plant loss was less than 5% for non-grafted seedless watermelons and for seedless watermelons grafted onto wild watermelon rootstocks. No plant loss was observed in seedless watermelons grafted onto squash rootstocks.

There may be multiple factors contributing to the plant loss. One possible factor is low temperature stress, which we discussed in the previous article. We observed high cucumber beetle populations in the field, including both striped and spotted cucumber beetles, with striped cucumber beetles being more abundant (Figure 1). The beetles were actively feeding on watermelon stems (Figure 2). Several dead plants had stem damage, although we are not sure whether beetle damage was the direct cause of plant death. Watermelon is less susceptible to bacterial wilt, which is transmitted by cucumber beetles, compared to cantaloupes and cucumbers; however, severe feeding damage to the stems of young seedlings may still lead to plant death, especially at a time when plants grow slowly due to low night temperatures.

Figure 1. Cucumber beetle damage on watermelon seedlings (Photo by Wenjing Guan).

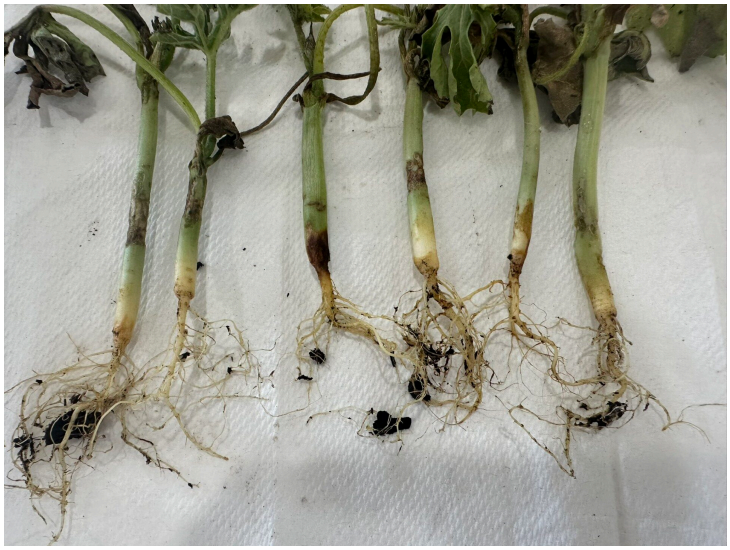

Figure 2. Dead watermelon seedlings were likely affected by multiple factors. Cucumber beetle feeding damage was observed on nearly all stems (photo: Wenjing Guan)

We did not observe differences in cucumber beetle preference between grafted and non-grafted plants. However, the stronger stems associated with squash rootstocks may have made those plants more tolerant of chewing damage.

There have been questions about whether pollenizer plants should also be grafted in fields planted with grafted seedless watermelons, since pollenizers are often considered less susceptible to Fusarium wilt than seedless watermelons. It is understandable that farmers may choose to use non-grafted pollenizers to reduce production costs. However, in the situations observed here, a high percentage of non-grafted pollenizer plants were lost due to environmental stress and insect damage. If this occurs, growers may not achieve the yields expected from grafted seedless watermelon plants due to insufficient pollination.

May's Cold Start And A Pattern Change

(Jacob Dolinger, jdolinge@purdue.edu)

The first week of May certainly didn't feel like May, as temperatures were 5-10°F below normal across the state (Figure 1). Daytime maximum temperatures struggled to reach 60°F across the northern half of the state, while southern areas only saw low 60s for much of the week. Using Indianapolis as a reference point, given its location near the state's geographic center, normal maximum temperatures should be near 70°F by May 7. Minimum temperatures ranged from the 30s in the far north to the low 40s across much of the rest of the state. The normal low temperature for Indianapolis by May 7 is 50°F. While some frost may have occurred across far northern parts of the state, minimum temperatures were still slightly too high to see widespread frost concerns, which is good news for gardeners.

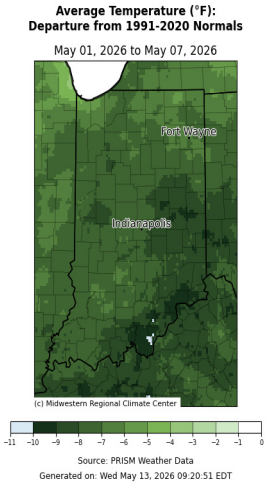

Figure 1. Departure from normal for average temperatures across Indiana. Southern and eastern parts of the state were nearly 10°F below normal for average temperatures for the first week of May.

There was a gradient in precipitation across the state. Much of the state, from the Hoosier Heartland Highway southward, observed normal to above normal precipitation. Some pockets observed over 200 percent of normal precipitation for the week (Figure 2). Despite this, precipitation was below normal across Northwest Indiana and the southwestern corner of the state in Posey County. Locations near Indianapolis and southward received 2-3 inches of precipitation during the week, while Northwest Indiana observed a maximum of 0.5-0.75 inches of precipitation for the week (Figure 3). Certain river gauges along the White River and Wabash River peaked at minor flood stage during the first few days of the month, though most have since returned to lower levels.

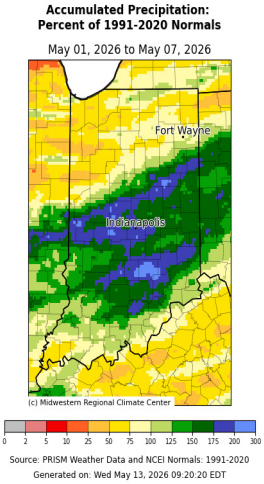

Figure 2. Percent of normal accumulated precipitation for Indiana for May 1-7. Precipitation was above normal across central and southern Indiana, and below normal to the north.

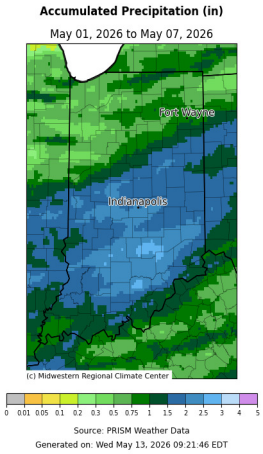

Figure 3. Accumulated precipitation for Indiana for May 1-7. Totals were highest from Indianapolis southward.

Precipitation in April did a good job of alleviating drought conditions. By May 5, there were only small areas of D0 (abnormally dry) and D1 (moderate drought) across the southern parts of the state along the Ohio River (Figure 4). Drought does not seem to be a concern heading through the rest of spring, as the National Weather Service's Climate Prediction Center anticipates a likely chance of above normal precipitation through at least the rest of May. This is coupled with a pattern shift that has temperatures trending above normal through Memorial Day Weekend.

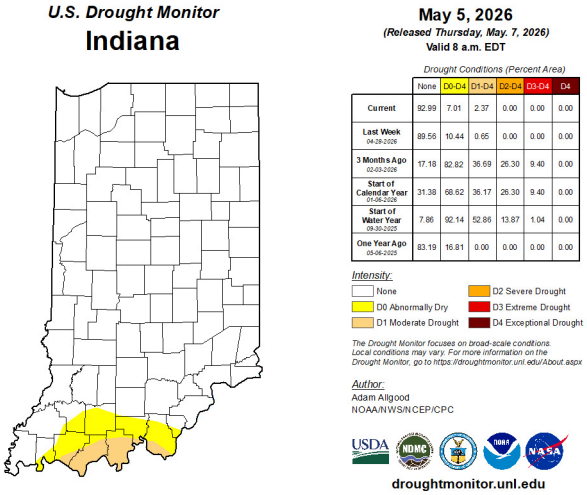

Figure 4. Drought monitor for Indiana as of May 5. Drought has improved greatly through the Spring, with the only drought conditions left in southern Indiana.

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