



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

Vegetable Insect Update - David Owens, Extension Entomologist, owensd@udel.edu and Bill Cissel, Extension Agent - Integrated Pest Management; bcissel@udel.edu

Sweet Corn

by Bill Cissel and David Owens

Sweet corn trapping data is updated by Tuesday and Friday mornings and can be accessed here: <http://agdev.anr.udel.edu/trap/trap.php>. If there is one thing insects are really good at, it is making liars out of people. That said, I expect low earworm numbers until mid-July. Trap catches are as follows:

Trap Location	BLT - CEW	Pheromone CEW	Corn spray schedule
	3 nights total catch		
Dover	3	0	4 day
Harrington	0	0	No spray
Milford	0	0	No spray
Rising Sun	1	0	6 day
Wyoming	1	0	6 day
Bridgeville	0	0	No spray
Concord	0	0	No spray
Georgetown	0	1	6 day - no spray
Greenwood	0	0	No spray
Laurel	0	6	4 day
Seaford	0	1	6 day - no spray

Cucurbits

by David Owens

With the warm weather, it is not surprising that low levels of spider mites can be found in most fields. Check field edges and near wood lines. The action threshold we use as a benchmark is 1-2 mites per crown leaf, 20 - 30% of the crown leaves infested. During hot dry spells, try to limit mowing as much as possible, spider mites feeding on the grasses will be forced to look elsewhere for food once the plant they are on has been cut. I have also noticed a slight uptick in cucumber beetle activity.

Sunburn in Fruiting Vegetables and Fruit Crops

- Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Recent weather has produced conditions where there is high potential for sunburn in fruits and fruiting vegetables. Growers may need to consider ways to protect against sunburn. Sunburn is most prevalent on days with high temperatures, clear skies and high light radiation. We commonly see sunburn in watermelons, tomatoes, peppers, eggplants, cucumbers, apples, strawberries, and brambles (raspberries and blackberries).

There are three types of sunburn which may have effects on the fruits. The first, sunburn necrosis, is where skin, peel, or fruit tissue dies on the sun exposed side of the fruit. Cell membrane integrity is lost in this type of sunburn and cells start leaking their contents. The critical fruit tissue temperature for sunburn necrosis varies with type of fruit. Research has

shown that the fruit skin temperature threshold for sunburn necrosis is 100 to 104°F for cucumbers; 105 to 108°F for peppers, and 125 to 127°F for apples. Fruits with sunburn necrosis are not marketable. Injury may be white to brown in color.

The second type of sunburn injury is sunburn browning. This sunburn does not cause tissue death but does cause loss of pigmentation resulting in a yellow, bronze, or brown spot on the sun exposed side of the fruit. Cells remain alive, cell membranes retain their integrity, cells do not leak, but pigments such as chlorophyll, carotenes, and xanthophylls are denatured or destroyed. This type of sunburn browning occurs at a temperature about 5°F lower than sunburn necrosis. Light is required for sunburn browning. Fruits may be marketable but will be a lower grade.

The third type of sunburn is photooxidative sunburn. This is where shaded fruit are suddenly exposed to sunlight as might occur with late pruning, after storms where leaf cover is suddenly lost, or when vines are turned in drive rows. In this type of sunburn, the fruits will become photobleached by the excess light because the fruit is not acclimatized to high light levels, and fruit tissue will die. This bleaching will occur at much lower fruit temperatures than the other types of sunburn. Damaged tissue is often white in color.

Storms that cause canopies in vine crops to be more open will expose fruits to a high risk of both sunburn necrosis and photooxidative sunburn.

Genetics also play a role in sunburn and some varieties are more susceptible to sunburn. Varieties with darker colored fruit, those with more open canopies, and those with more open fruit clusters have higher risk of sunburn.

Control of sunburn in fruits starts with developing good leaf cover in the canopy to shade the fruit. Fruits most susceptible to sunburn will be those that are most exposed, especially those that are not shaded in the afternoon. Anything that reduces canopy cover will increase sunburn, such as foliar diseases, wilting due to inadequate irrigation, and excessive or late pruning. Physiological leaf roll,

common in some crops such as tomato, can also increase sunburn.

In crops with large percentages of exposed fruits at risk of sunburn, fruits can be protected by artificial shading using shade cloth (10-30% shade). However, this is not practical for large acreages.

For sunburn protection at a field scale, use of film spray-on materials can reduce or eliminate sunburn. These materials are kaolin clay based, calcium carbonate (lime) based, or talc based and leave a white particle film on the fruit (such as Surround, Screen Duo, Purshade and many others). There are also film products that protect fruits from sunburn but do not leave a white residue, such as Raynox. Apply these materials at the manufacturer's rates for sunburn protection. They may have to be reapplied after heavy rains or multiple overhead irrigation events.

While particle films have gained use in tree fruits, their usefulness in vegetables is still unclear. Research in a number of states has shown reduced fruit disorders such as sunburn in peppers and white tissue in tomatoes when applied over those crops. Watermelon growers have used clay and lime based products for many years to reduce sunburn in that crop in southern states.

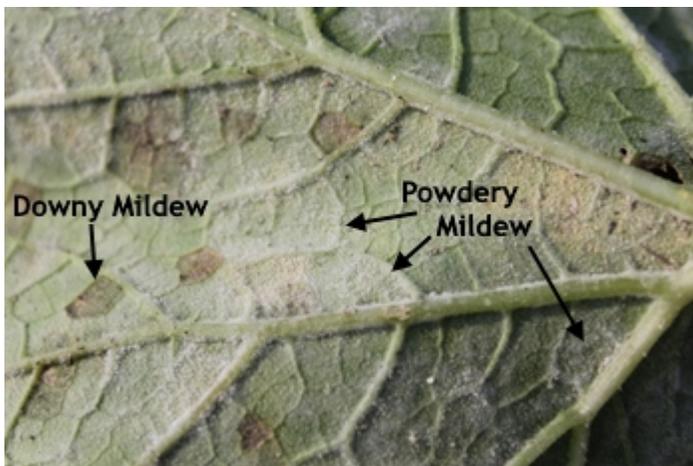
There are some drawbacks to the use of particle films. If used for sunburn protection on fruits, there is added cost to wash or brush the material off at harvest. Where overhead irrigation is used, or during rainy weather, the material can be partially washed off of plants, reducing effectiveness and requiring additional applications. Produce buyers can also have standards relating to the use of particle films and may not accept products with visible residues.

Cucurbits at Risk for Downy and Powdery Mildew - *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.edu*

Note: Please read labels carefully as some of the fungicides mentioned in this article are not labelled on all cucurbits.

Powdery Mildew on Cucurbits

Powdery mildew on cucurbits is now beginning to progress. The powdery mildew pathogen is windborne and, unlike many other pathogens, can efficiently infect during dry periods such as we're experiencing. Effectively managing powdery mildew requires fungicides. However, because the pathogen is prone to resistance, fungicide resistance within the pathogen population (*Podosphaera xanthii*) must be considered. Bioassays to evaluate the presence of resistance throughout the region have been conducted in the past year. Quintec (FRAC 13), Luna products (FRAC 7), and Vivando (FRAC U8) were all highly effective throughout the Mid-Atlantic and Northeast. Torino (FRAC U6) was effective in some locations but moderately effective in others including in my Maryland trials. Remember that the FRAC group 11 and 1 fungicides, which include strobilurin fungicides like Flint, and Topsin M, are **ineffective**. FRAC group 3 and 7 fungicides, which include Myclobutanil (Nova), boscalid (one of the active ingredients in Pristine), Fontelis and Folicur are in an intermediate group. We do know that resistance to FRAC groups 3 and 7 can be found in our pathogen populations, but if these products are used judiciously and in rotation with other effective products, they can be useful. Always tank mix fungicides with broad spectrum materials such as chlorothalonil, and alternate with a fungicide that has a different mode-of-action (FRAC group). A good strategy is to use moderately resistant cultivars and then alternate fungicides in FRAC groups where resistance has not been detected with fungicides in FRAC groups 3 or 7.



Pumpkin leaf that has both white powdery lesions, and brown downy mildew lesions. It is important to be sure that you are spraying for the correct disease because the most effective fungicides for each disease are different.

Downy Mildew on Cucumber

Downy mildew on cucumber has now been confirmed in Salem County, NJ. All cucumbers should be protected with targeted fungicides. Other cucurbits should be scouted aggressively for the presence of downy mildew.

Bacterial Fruit Blotch on Muskmelon and Watermelon - Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.edu

There have been a couple of positive confirmations of bacterial fruit blotch over the past two weeks in the region. Scout for the appearance of small water soaked lesions on watermelon or muskmelon leaves. However, be aware that plants can harbor this pathogen and not show symptoms until harvest.

Some research-based information that we have on bacterial fruit blotch (BFB) is that it will only spread from infected transplants to plants during flowering and shortly afterward. In addition, spread of BFB will occur most rapidly under warm, humid conditions and during rainfall or overhead irrigation. When the bacterium is deposited on the watermelon flower, it can penetrate through stomates and infect fruit. The infections that cause fruit loss can only take place during flowering and fruit development before wax deposition (wax seals the stomates). That means that the yield damaging infections occur only during flowering and for about 3 weeks afterward. Although infections occur early in the season, fruit symptoms often do not develop until harvest.

Chemical treatments (i.e. copper) to protect the crop should be applied before and during flowering, and for three weeks afterward. If subsequent harvests are anticipated, those fruit will also need to be protected. Actigard also can be beneficial if applied prior to flowering (see the Mid-Atlantic Commercial

Vegetable Recommendations for additional information). I recommend that the workers work in uninfected fields first and any suspect fields last in the day. They should shower and wash their clothes and shoes before going into another field the next morning.

If the pathogen is introduced into the field it will survive for a short time as debris on plastic. If plants are removed and clean transplants are placed in those holes, infection could occur. The soil can remain infested for two years. However, be aware that if volunteer plants are present in the field in the intervening year, the pathogen may survive longer.

A frequent question that I get is how to clean a greenhouse after a BFB outbreak. Discard trays, wash surfaces with a greenhouse cleaner that indicates that it is a bactericide (for example: quaternary ammonium compounds such as Green-Shield®, Phyan 20®, and KleenGrow™; hydrogen peroxide & peroxyacetic acid such as Sanidate®; hydrogen dioxide such as ZeroTol® 2.0, Oxidate® 2.0; or chlorine bleach) etc.

Another question is if equipment can carry the pathogen from one field to another. The biggest risk is taking debris across a field on wheels that crush the foliage. To reduce field to field spread, remove any debris stuck on the truck or equipment and wash the truck with soap and water. If you are concerned about the wheels, they can be washed with the greenhouse sanitizers described above.

Agronomic Crops

Soybean Insect Scouting Update - David Owens, *Extension Entomologist*, owensd@udel.edu and Bill Cissel, *Extension Agent - Integrated Pest Management*; bcissel@udel.edu

We continue to see low numbers of Japanese beetles, green cloverworms, and thrips in fields. There has been an uptick in the number of pirate bugs, feeding on thrips and early instar worms. Dectes is showing up in fields. Fields with the greatest number of Dectes should be prioritized at harvest, as much as possible. Defoliation in general has been pretty light. Two spotted

spider mite hotspots can be found in several fields. Pay attention to field edges when scouting for them.

An Extension bulletin produced by Virginia Tech may be of interest. There is a relationship between defoliation, leaf area index, and yield. If the canopy closes by R3, and there are more than 3.5 acres worth of leaves for every ground acre, leaf feeding will not have as great an impact on yield, whereas thinner canopies are more sensitive. The bulletin and some useful photos can be found here:

http://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/444/444-203/444-203_pdf.pdf.

“Knee High by the 4th of July!” and Corn Insecticide Decisions - Bill Cissel, *Extension Agent - Integrated Pest Management*; bcissel@udel.edu, Phillip Sylvester, *Extension Agent - Agriculture, Kent County*; phillip@udel.edu and David Owens, *Extension Entomologist*, owens@udel.edu

The old farming adage “Knee high by the 4th of July”, a benchmark used to indicate the corn crop is doing well, seems a little outdated these days. I personally associate the 4th of July as a time when I start noticing some of the earliest planted corn in tassel and that means some are considering whether or not they are going to apply a fungicide. This also begs the question, *should an insecticide be included with my fungicide application at tasseling?*

Before answering this question, you should ask yourself what you are attempting to control with the insecticide. If you are targeting stink bugs, the first thing you must consider is if you have a stink bug infestation and is the infestation at threshold?

To determine if you have a stink bug infestation, you can scout your corn field by actively searching plants for stink bugs. Scouting efforts should be initially focused on field edges, especially those fields adjacent to wheat and fields bordered by weedy ditches or woods. If you find high levels of stink bugs on the field edge, make sure you are also sampling the field interiors.

We are still capturing a large number of green stink bug adults in some of our black light traps and as wheat harvest winds down throughout the region, experience tells us that this is a time when native brown stink bugs move from wheat to corn. Adding insult to injury, due to the wet spring, field corn is behind in development and at greater risk for yield losses from stink bug feeding.

Two new thresholds have been developed in North Carolina based on the sampling method, **partial** and **entire plant**. The partial plant sampling method is based on only sampling a portion of the plant and recording the number of stink bugs per 100 plants. The entire plant sample is based on the percent of infested plants, visually searching the entire plant for stink bugs.

The **partial plant threshold** is as follows:

V14-VT only sampling the stalk at one leaf above and below the primary ear:

- 9 stink bugs per 100 plants or fewer, do not treat.
- 18 or more stink bugs per 100 plants, treat.
- If the number of stink bugs per 100 plants is between 9 and 18, treat if you have 13 or more bugs per 100 plants.

R1-R4 only sampling the stalk at one leaf above and below the primary ear:

- 35 stink bugs per 100 plants or fewer, do not treat.
- 52 or more stink bugs per 100 plants, treat.
- If the number of stink bugs per 100 plants is between 35 and 52, treat if you have 43 or more bugs per 100 plants.

If you **sample the entire plant**, the threshold that is being recommended in North Carolina is as follows:

V14-VT sampling entire plant

- <16% of the plants infested, do not treat.
- >26% of the plants infested, treat.
- If the % of the plants infested falls between 16-26%, treat if 21% or more of the plants are infested.

R1-R4 sampling entire plant

- <30% of the plants infested, do not treat.
- >43% of the plants infested, treat.

- If the % of the plants infested falls between 30-43%, treat if 36% or more of the plants are infested.

It should be noted that this threshold was recently published and has not been evaluated in Delaware.

Here is a link for more information on how to use the new stink bug threshold that was developed in North Carolina:

<https://entomology.ces.ncsu.edu/2018/04/new-stink-bug-thresholds-in-corn/>

So what about including an insecticide with fungicide applications at tasseling to target stink bugs?

If your field is below threshold for stink bugs, then the answer is No. Automatically including an insecticide with your fungicide application has not been effective at reducing stink bug infestations and preventing injury to corn for several reasons:

1. Stink bug injury on corn is more severe when feeding occurs during earlier growth stages (prior to pollen shed) so these two timings do not necessarily overlap. Waiting until after tasseling to control a threshold population of stink bugs is too late because the most severe damage is already done.

2. Controlling stink bugs in corn after tasseling is difficult because of the dense foliage above the ear zone and the habit of stink bugs to seek refuge in leaf axils and in the folds of leaves.

The full article can be found here:

<https://entomology.ces.ncsu.edu/2017/06/management-stink-bugs-in-corn-before-it-tassels/?src=rss>

3. Do not expect much if any residual control so if stink bugs aren't present when you spray, you are not reducing their populations or preventing them from infesting your field.

However, if your field is at threshold for stink bugs, then the answer is Yes, you should include an insecticide. Keep in mind that if you haven't been scouting your fields prior to tasseling and you have a threshold population of stink bugs, most of the damage is probably already done. The reason for this is the greatest yield loss potential from stink bug feeding

occurs prior to pollination so waiting until tasseling to control stink bugs may be too late.

Here is a link to the publication:
<http://www.bioone.org/doi/pdf/10.1673/031.011.16801>

If you are at threshold for stink bugs and need to spray your corn, most pyrethroids should provide control. However, based on a vial bioassay conducted in NC using brown stink bugs collected from wheat, bifenthrin was found to be the most efficacious.

Here is a link to the report:
<https://entomology.ces.ncsu.edu/2017/06/insecticide-choice-for-stink-bugs-in-corn/?src=rss>

Growing Degree Days (GDD) and Rainfall Through July 2nd - Jarrod O. Miller, Extension Agronomist, jarrod@udel.edu

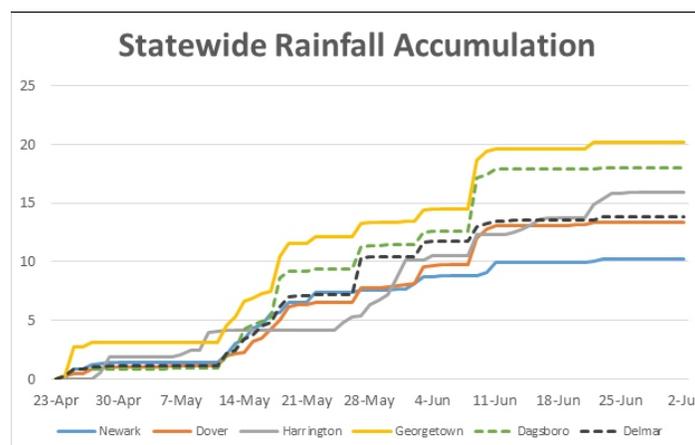
Since some have chosen to replant corn fields I have added the first half of June's GDD. Most corn planted in June should be close or ready to side-dress any additional nitrogen. There should be tasseling across the state in our earliest planted fields, and this is possibly occurring on some very short corn. High temperatures and moisture stress will be an issue during this stage, so add that to your list of possible yield reducing factors this year. Here are the GDD needed to reach these corn stages:

V6: 475 GDD
 V12: 870 GDD
 VT: 1135 GDD
 R1: 1400 GDD

From the rainfall graph you can observe what is very apparent, many dryland fields are in need of rain. Although Georgetown has received 20 inches of rain since April, its moved on down into the profile or into the watershed, and the soil surface is fairly dry. For those who say the east coast is lucky with our annual rainfall accumulations, remind them that timing of that rain is more important.

Table 1: Growing degree days accumulated through July 2nd from the beginning of each week.

	Sussex	Kent	New Castle
22-Apr	1394	1347	1283
29-Apr	1342	1300	1250
6-May	1234	1190	1150
13-May	1130	1084	1053
20-May	1018	977	959
27-May	861	818	811
3-Jun	708	670	661
10-Jun	586	550	547
17-Jun	449	423	418



Don't Get Burned...by Potato Leafhoppers - Bill Cissel, Extension Agent - Integrated Pest Management; bcissel@udel.edu

Potato leafhopper populations have increased dramatically over the last couple of weeks. There has also been a lot of alfalfa knocked down over the past 7-10 days. If you recently cut your field, sample the re-growth as soon as it starts to green up, especially if your field was at or near threshold for leafhoppers before you cut it. Continue to sample all other fields on a weekly basis until the final cutting. To scout, ten sweep net samples should be taken in 10 random locations throughout the field when the alfalfa is dry.

The threshold for alfalfa 3" or less is 20 leafhoppers per 100 sweeps, 4-6" tall is 50 per 100 sweeps, 7-10" tall is 100 per 100 sweeps and greater than 11" is 150 per 100 sweeps. If the field is more than 60 percent bud stage or if it has experienced "hopper burn", the alfalfa should be cut instead of sprayed.



For more information on the identification, biology, and management of potato leafhoppers, please review our fact sheet:

<http://extension.udel.edu/factsheets/potato-leafhopper-control-in-alfalfa/>

Here is a link to our Insect Control in Alfalfa Recommendations (pure stands only):

<http://extension.udel.edu/ag/insect-management/alfalfa/>

Here is a Youtube video discussing how to sample for potato leafhoppers:

<https://youtu.be/7ybclcNu2rA>

Corn Reproduction and High Temperatures

- Jarrod O. Miller, Extension Agronomist, jarrod@udel.edu, Cory Whaley, Extension Agent - Agriculture, Sussex County; whaley@udel.edu, and Phillip Sylvester, Extension Agent - Agriculture, Kent County; phillip@udel.edu

Droughty conditions aren't our only worry right now. Corn that survived the deluge of rain is tasseling in our earliest planted fields, and our current heat index can be an issue with pollination. While corn enjoys warmer weather, anything above 86°F will actually slow plant growth. A corn plant also prefers cooler nights, with temperatures in the 60s.

Pollination occurs during tasseling and silking stages, and high temperatures can adversely affect kernel formation either during pollination or grain fill. First of all, warmer weather this week may accelerate corn maturity earlier than we would like. High daytime temperatures (> 86°F) may limit photosynthesis which provides sugars for ear formation. A survey of [worldwide research](#) on corn growth and temperatures observed that the ideal temperature for growth as well as flowering was 86-87°F. Temperatures over 99°F severely affect pollen production during silking, but consecutive days in the 90s will at least reduce pollination. For grain fill, optimum temperatures are 80°F, with a maximum of 97°F. In the mid-west, high nighttime temperatures (>72°F) have been observed to reduce grain fill, possibly due to the use sugars for respiration (energy) rather than kernel production.

This photo from last year shows a worst-case scenario when temperatures are high, with many kernels failing to pollinate. In most fields, it may just be a few kernels per ear that fail, but over several acres that can add up.



Over the week of June 28-July 4, when tasseling started in some fields, we have had temperatures at least 86°F, with four to six days in the 90s (Table 1). New Castle has seen two nights above 72°F, while both Kent and Sussex have had three. As of writing this, cooler days and nights are in the forecast, as more of our earlier planted fields will start pollination. That is good news for most fields that are just getting started, but for all the late-planted corn and replants, watch the temperatures in mid and late July. Temperature may be an additional

factor to consider if this year's yields are lower than expected.

Table 1: Number of days above threshold temperatures over the week of June 28-July 4

	New Castle	Kent	Sussex
1 Week → 7 days possible			
Daytime > 86° F	7	7	7
Daytime in the 90s	6	4	6
Nighttime > 72° F	2	3	3

What Can I Do to Manage Scab in 2019? - Andrew Kness, Agriculture Extension Educator, University of Maryland Extension, Harford County; akness@umd.edu

If you grew wheat this year, chances are you don't have to look too hard to find head scab/*Fusarium* head blight (FHB). The excessive rainfall, humidity, and warm temperatures that we had around wheat flowering provided the perfect habitat for *Fusarium graminearum*, the causal agent of FHB, to thrive. Once you have FHB, you [have few options to manage it](#); but what can you do in 2019 to better your odds (besides hope for little rain during flowering)?

To understand your options you need to understand the lifecycle and biology of *F. graminearum*. The pathogen survives on residue, particularly that of wheat, barley, and corn and will persist through the winter on this material. During periods of wet, humid, and warm temperatures in the spring, the fungus will produce spores. If wheat or barley is growing in the field, the spores are splashed up onto the heads via rain or irrigation, or carried by the wind. If the wheat or barley is flowering, the spore can germinate and infect the plant through the flower; it cannot get into the plant any other way. This is why we recommend fungicide application at flowering. Once the pathogen infects the wheat, it grows within the spikelet, bleaching it in the process (Figure 1) and infects the developing grain, causing shriveled, light weight, discolored kernels called tombstones. Infected grain may contain deoxynivalenol (DON) vomitoxin. FHB not only

reduces yield, but has the potential to contaminate your grain with DON.

With that in mind, here are some tips for managing FHB in 2019:

Know your variety! If you plan to grow and market quality grain, then you need to know your varieties. Unlike barley, wheat does have some resistance to FHB, although it is not complete resistance. Some varieties are more resistant than others, so my suggestion is to grow a variety that has the best resistance and yield potential. Consult with your seed rep and utilize the data from our wheat variety trials. A collaborative project between the University of Maryland and University of Delaware screens wheat varieties for resistance to FHB. The data can be found [here](#), or call your Extension Office for a copy.

Use a fungicide at flowering. Unless we have an exceptionally dry spring, you'll likely need a fungicide application to protect against FHB. Use the [Scab Risk Assessment Tool](#) to help assess your risk. Time your application at the start of flowering (Feekes 10.5.1) and up to 5 days thereafter. Triazole fungicides work best, particularly Caramba (metconazole), Proline (prothioconazole), and Prosaro (prothioconazole + tebuconazole). Do not use strobilurin fungicides! See this [Maryland Agronomy News article](#) for more information on fungicide strategies.

In the 2019 growing season will be a new product from Syngenta, called Miravis Ace (adepidyn). This will be a new mode of action fungicide (SDHI) to be used on FHB, and should help us with managing resistance by rotating it with the Triazoles. Preliminary university testing shows that Miravis Ace does well against FHB; however, claims of a wider application window seems questionable at this point, so application timing will still be critical.

Select your best fields. Since *F. graminearum* can survive on small grain and corn residue, planting wheat or barley behind soybeans is better than following corn. *F. graminearum* doesn't survive well on soybean residue. If you are following corn, consider a light tillage pass with a vertical till tool to size residue. This will accelerate residue decomposition, killing some of the surviving *F. graminearum*.

It is important to utilize as many management strategies as possible for FHB. Host resistance can only provide about 50% FHB suppression in wheat (and 0% in barley), and fungicides can only provide 50% suppression at best. Growers must use a combination of variety selection, fungicides, and cultural practices to achieve a high quality wheat or barley crop.



Figure 1. Wheat head with Fusarium head blight.

General

Brown Marmorated Stink Bug Management Survey for Commercial Producers - David Owens, Extension Entomologist, owensd@udel.edu

Penn State is taking the lead on a nation-wide survey to assess the economic impact to agriculture caused by the brown marmorated stink bug. This from the survey coordinator Dr. Jayson Harper: "The objective of the survey is to better provide you with the help you need in managing this pest. We'd like to find out when BMSB became a problem for you, where you currently get information on how to control

them, how much damage you have suffered, your use of and interest in various management practices, and your feelings about biological control methods and their potential for your operation. The results of the survey will be used by Extension programs across the United States to fine tune management advice for the BMSB and help prioritize research and outreach activities.

If you'd like to participate, the survey should take you about 20-25 minutes to complete. Your individual survey responses will be confidential and the data collected will only be reported in summaries. Your participation is voluntary and you can decide not to answer a given question if you choose. The link to the on-line survey along with more information about the survey can be found on the StopBMSB.org website (<http://stopbmsb.org/go/BfxA>)."

Guess the Pest! Week #14 Answer: Corn Rootworm - Bill Cissel, Extension Agent - Integrated Pest Management; bcissel@udel.edu

Congratulations to Kathleen Heldreth for correctly identifying the damage in the photo as corn rootworm damage and for being selected to be entered into the end of season raffle for \$100 not once but five times. Everyone else who guessed correctly will also have their name entered into the raffle. Click on the Guess the Pest logo to participate in this week's Guess the Pest challenge!

Guess the Pest Week #14 Answer: Corn Rootworms

The corn plants in the photo are damaged by corn rootworm larvae. As you can see, the larvae feed on the roots and root tissue of the plants causing the plant roots to be "pruned". Older larvae will tunnel into the roots leaving visible entrance holes and blackened root tips. Plants with excessive root pruning will usually lodge and in reaching for the sun, become "goosenecked". Corn rootworm infestations are unusual for Delaware and not something we typically have to manage for. Crop rotation is the preferred method of control in regions with sporadic populations. Corn rootworm females prefer to lay eggs in corn fields in August and

September. The eggs do not hatch until the following spring. If the field is rotated out of corn, the larvae will starve to death in the absence of a suitable host plant.



Guess the Pest! Week #15 - *Bill Cissel*,
Extension Agent - Integrated Pest Management;
bcissel@udel.edu

[What caused this damage?](#)

Test your pest management knowledge by clicking on the GUESS THE PEST logo and submitting your best guess. For the 2018 season, we will have an "end of season" raffle for a \$100.00 gift card. Each week, one lucky winner will also be selected for a prize and have their name entered not once but five times into the end of season raffle.

This week, one lucky participant will also win A Farmer's Guide To Corn Diseases (\$29.95 value).

You can't win if you don't play!

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of June 28 to July 4, 2018

Readings Taken from Midnight to Midnight

Rainfall:

No rainfall recorded

Air Temperature:

Highs ranged from 97°F on July 2 to 88°F on July 4.

Lows ranged from 76°F on July 3 to 67°F on July 30

Soil Temperature:

75.3°F average

Additional Delaware weather data is available at http://www.deos.udel.edu/monthly_retrieval.html and <http://www.rec.udel.edu/TopLevel/Weather.htm>

Weekly Crop Update is compiled and edited by Emmalea Ernest, Associate Scientist - Vegetable Crops

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