



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

Vegetable Crop Insect Scouting - David Owens, Extension Entomologist, owensd@udel.edu

It's starting to get a little buggy out there.

Melons

Striped cucumber beetle, Lepidopteran rindworms, and spider mites are all very active in fields. Beet armyworm continues to pop up in fields with pigweed. On pigweed, look for intense shredding of the upper leaves, but note that this can be confused with webworm. Flea beetles on pigweed leave large round to rectangular holes. Keep a close eye on fields with mites going into harvest. Harvesting stresses vines, and stress combined with high heat favors mite population growth. Also, mites will hitch a ride on equipment and workers, so if hotspots were confined to one portion of a field they may spread to a much larger area.

Both melon and green peach aphids are reappearing in vining cucurbits. Aphid colonies reproduce quickly, especially in fields that have been treated with pyrethroids that knock out lady beetles, pirate bugs, lacewings and wasps. Large aphid colonies can weaken vines toward the end of the season, and their honeydew secretion can coat fruit resulting in sooty mold growth. This can be especially problematic in pumpkins. Melon growers may be considering a treatment for striped cucumber beetle. Assail will take care of aphids. For those with mites and worms, Minecto Pro is labeled for aphids.

For those with just worms, diamides are good options. There is a wide range of other products that are more aphid specific.

Cole Crops

The final member of the cole crop worm complex was spotted earlier this week in a kale plot in Georgetown: cabbage webworm. Be sure to scout transplants carefully, worms can quickly do heavy damage on small plants. Last year, about 10% of my transplants turned into spears almost overnight because a yellow striped armyworm found the plants as soon as I put them out to harden off. Cabbage looper is very active, but if hot dry weather persists into the fall, diamondback moth may become more abundant.

Sweet Corn

The 2020 moth flight is beginning. Some trap locations are high while others are low to moderate. Even traps that I have next to silking corn are highly variable in relatively short distances (less than 1 mile). Fall armyworm has reached threshold levels in spots throughout the state. Females lay egg masses that contain dozens to a couple of hundred eggs. Larvae crawl or disperse on silk threads to neighboring plants, leading to circular areas of a few to several dozen infested plants. When opening up whorls, you may see green fall armyworm color morphs, particularly on small worms. Fall armyworm also has a black spot on the side of the body, but this spot is a little larger and farther back than that of beet armyworm. Armyworms feed deep in the whorls where it can be difficult to reach with an insecticide. Nozzles directed over the whorl and applying product

through a minimum of 50 GPA will help. Good control options include Rimon, Avaunt, and Radiant. Lannate can give good control if worms haven't gone deep, or if worms are exposed when the tassel pushes them out. Save Besiege or Coragen for silking. We are limited with how much active ingredient can be applied per acre per year, and we need that chlorantraniliprole for earworm protection now that the moth flight is beginning.

When scouting, you may see rectangular ears that are window-paned or partially so. Spotted cucumber beetle will feed on corn and do this, but it is of little consequence. If you are unsure of the culprit, look for small, rectangular dark green frass and the absence of increasingly severe damage from the outer to the inner whorl leaves.

Aphids may start showing up in sweet corn. The best options for aphids include Lannate, Sivanto, and Assail. Sivanto and Assail do not have any worm activity, but both are far less toxic to workers and to beneficial insects. Spider mites might be present along field edges. If you need to treat for spider mites, in addition to Oberon and Brigade, Zeal was recently registered for use in sweet corn.

Thursday corn earworm moth capture is as follows:

Trap Location	BLT - CEW	Pheromone CEW
	3 nights total catch	
Dover	1	151
Harrington	1	57
Milford	5	27
Rising Sun	0	39
Wyoming	0	47
Bridgeville	0	4
Concord	1	19
Georgetown	0	4
Greenwood	0	--
Laurel	2	56
Seaford	2	42
Lewes	0	5
Millsboro	9	0

Pepper

Continue scouting for beet armyworm and yellow striped armyworm. While yellow stripes are fairly easy to control, beet armyworm is resistant to pyrethroids. Also be aware that aphid populations are starting to show up in other vegetables; aphids are favored by frequent pyrethroid applications. Corn earworm flight is starting to pick up. Use a beat sheet to determine if worms are present. No thresholds have been worked out for pepper.

Beans

Continue scouting for potato leafhopper. Thresholds are 100 per 20 sweeps. Adults will quickly fly out of the sweep net, and some of the smallest nymphs can be quite difficult to see. Spider mites might also build up along field edges. We are limited in good miticides for snaps and limas. Dimethoate can knock them back, but may require more than one application. There should be good soil moisture and plants should be actively transpiring, so wait until the day cools before applying. Kanemite, Acramite, and Magister are all very good, long residual miticides. Magister is unique in that it has powdery mildew activity. Portal is registered for snap beans only.

Particle Films for Sunburn Protection-

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

With the recent high temperatures, we have seen an increase of sunburn in vegetables and fruits. Crops with inadequate leaf cover will be most susceptible.

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, Reflections 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 on the label for sunburn protection. They may have to be reapplied after heavy rains or multiple overhead irrigation events.



Purshade treated pepper. Note the sunburn on the side with lower coverage.

Particle films also have been used to reduce heat stress related disorders in fruits and vegetables. 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. Research at the University of Delaware in 2018-2019 showed improved tomato interior quality with some particle film products. Past work on watermelons has shown limited usefulness for overall stress avoidance.

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.

Leaf Scald in Sweet Corn- *Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu*

Leaf scald has been found in some sweet corn crops recently. Leaf scald is a physiological

disorder similar to necrotic sunburn in fruits and vegetables. It occurs when leaf temperatures rise above a critical level and cells die rapidly, leaving a bleached white appearance. While newly emerged leaves in the upper canopy of susceptible varieties that are the most exposed are the most likely to scald, some of the leaf scald can progress deeper into the canopy showing up on some of the corn husks, which will affect marketability. Leaf scald occurs most commonly when temperatures are in the high 90s or over 100, skies are clear (high solar radiation), and humidity is low. While effect on yield is usually minimal, leaf scorch at the ear leaf level can affect kernel fill.

Leaf scald has a genetic component as certain varieties of sweet corn are more susceptible. Overhead irrigation during high temperature hours can reduce this disorder.



Leaf Scald in sweet corn affecting the upper canopy.



Leaf scald affecting sweet corn husks.

Agronomic Crops

Agronomic Crop Insect Scouting - David Owens, Extension Entomologist, owensd@udel.edu

Field Corn

Western corn rootworm is active in corn fields that have not been rotated in north and western Kent County and New Castle County. If you observe more than one beetle per plant, there is potential for significant rootworm populations in next year's corn. Beetles are highly attracted to the silks and pollen. If you see them in your field and you are planning to put corn in the same field next year, consult the Handy Bt Trait Table for selecting an effective trait package to prevent root pruning:

https://agrilife.org/lubbock/files/2020/02/BtTraitTable_FEB_2020.pdf.

Sorghum

Fall armyworm is active in whorl stage sorghum, but treatment is only advised if 75% of whorls are infested. A new sorghum pest management sheet was posted to the UD extension pest management page earlier this year:

<https://www.udel.edu/content/dam/udelImages/canr/pdfs/extension/sustainable-agriculture/pest-management/InsectControlinSorghum-2020-updated.pdf>.

Soybean

All of the typical defoliators are present in soybean. In some full season bean fields defoliation had reached 10%; such fields need to be examined closely over the next week or so to make sure that there are not enough defoliators to go over the threshold. Also pay attention to drought stressed fields that are not growing quickly as defoliation will have a greater impact on them than on irrigated beans. Spider mites continue to be active, especially along field edges with ditchbanks by roads. I have a glorious mite outbreak at Carvel where my untreated check plot is pretty obvious with yellowing plants.

Some fields have large numbers of grasshoppers in them and also blister beetles. Be careful when reaching into the sweep net! Low numbers of

podworms and stink bugs can be found in full season fields, but are not considered much of a threat until R3 - R4, beginning pod to full pod stage.

Alfalfa

Continue scouting for potato leafhopper. While sweeping, pay attention to blister beetles. Blister beetle infested alfalfa that is about to be cut should not be fed to horses. Pay attention to PHI's of pyrethroids, and beware that dead beetles might not 'fall out' of the canopy and can still cause problems. Beetles are attracted to flowering alfalfa, if you observe a large number of grasshoppers and beetles in weedy edges, you may want to consider making your next cut before flowering.

Growing Degree Accumulation and Rainfall Through July 22

- Jarrod O. Miller, Extension Agronomist, jarrod@udel.edu; Cory Whaley, Sussex Co. Extension Ag Agent, whaley@udel.edu; James Adkins, Irrigation Engineer, adkins@udel.edu, Jake Jones, Extension Agriculture Agent, Kent County, jjones@udel.edu, Dan Severson, Agriculture Agent, New Castle County, severson@udel.edu

Corn planted by late April has already gone through pollination and should be at the R2 stage, which can be identified by blisters (bumps) on the tips of the kernels, and the detachment of the silks. For a good overview of the reproductive stages of corn and how to identify them, see this post from Bob Nielsen (<https://www.agry.purdue.edu/ext/corn/news/timeless/GrainFill.html>). While we have received steady heat units, temperatures have also been above ideal (87°F) for corn growth and grain fill, which may cause some delays compared to the GDD graph here. Warmer nights in the mid to upper 70s can also delay growth and cause issues for corn, although issues will not be readily apparent.

While this week's storm went across the upper half of the state, rainfall accumulation has been better over the last month for Sussex and Kent Counties (Figure 2). This is an average for each county, and does not represent specific areas,

which may receive different amounts than presented here. New Castle is currently at a 6-8 inch deficit compared to the rest of the state, although that deficit is built off of one very large

event, which may not have infiltrated the soil for storage. Keep checking your irrigation and water budgets to make sure pollination and grain fill reach their maximum potential.

Figure 1: Growing degree day accumulation since April 15th.

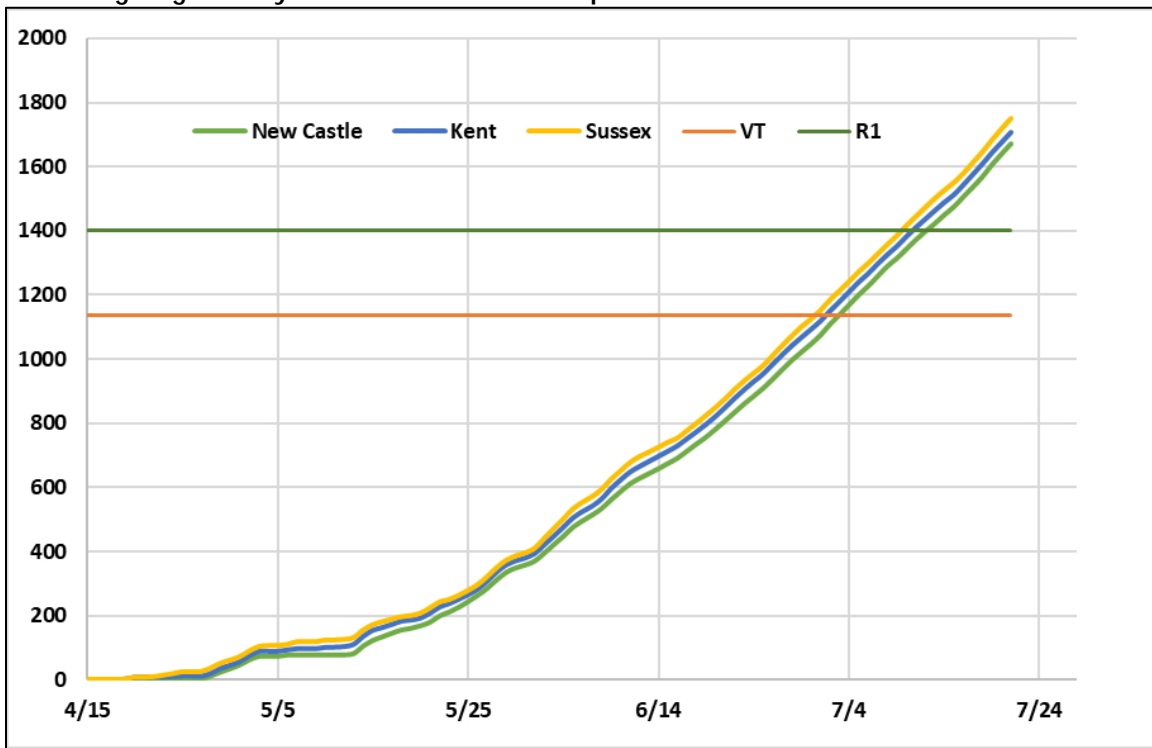
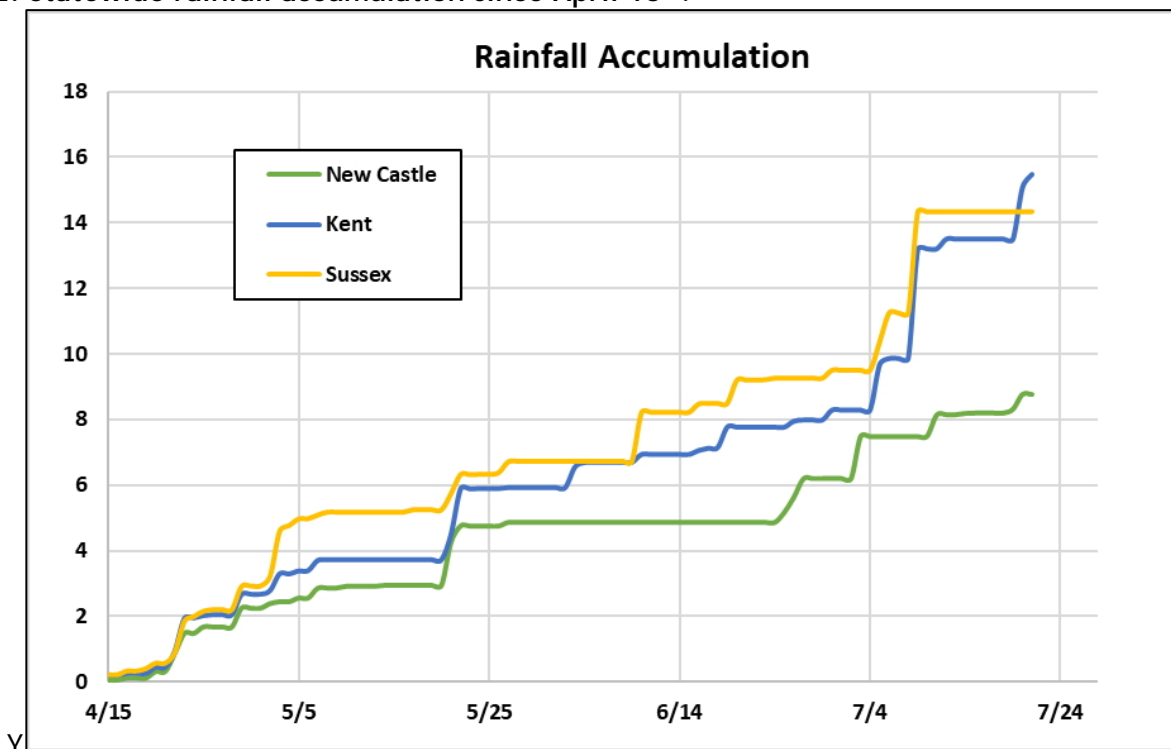


Figure 2: Statewide rainfall accumulation since April 15th.



General

Guess the Pest! Week 16 Answer: Stink Bug
- David Owens, Extension Entomologist,
owensd@udel.edu

Last week's dark corn splotch was the result of stink bug probing, looking for that developing ear. I've noticed a little bit more stink bug feeding on corn than last year, although I can't say if it was above threshold.



Guess the Pest! Week 17 - David Owens,
Extension Entomologist, owensd@udel.edu

This week we hop back into watermelons. Now that melons are being harvested, we are noticing some fruit problems. What is causing this melon to decay?



Test your pest management knowledge by clicking on the guess the pest logo and submitting your best guess.

https://docs.google.com/forms/d/e/1FAIpQLSfUPYLZnTRsol46hXmggj8fvt5f8-JI0eEUHb3QJaNDLG_4kg/viewform?c=0&w=1



Announcements

Health Insurance Webinar Series

Money, health and health insurance are interrelated. Learning what options are open to you and how best to choose and use your health insurance in times of Covid-19, is the smart action to take. This upcoming free webinar series will be for you if you are confused about health insurance options and how to get the most of your insurance policies. Brought to you by your colleagues at University of Delaware and Maryland Extension. Registration can be found at: https://go.umd.edu/health_insurance.

July 28 5:00-6:00 p.m. **Smart Use Managing Health Insurance and Resolving Conflicts**

Do you know what to do if you are denied coverage for care? What if you think you were billed incorrectly? Learn how to manage the process for handling disputes

with your health insurance company and how to avoid them. (5:00 to 6:00PM)

To register for any session, visit:

https://go.umd.edu/health_insurance

For more information on the Health Insurance Literacy Initiative, visit <https://extension.umd.edu/insure> Category 1 CEUs available for Maryland and Delaware Social Workers

Succession Planning Workshops: Investing in Your Farm's Future

Thursdays, August 6, 13, 20, 27, 2020 6:00-7:30 p.m.
Online

Each year, the average age of principal farm operators continues to get just a little bit older. Many of these principal operators may not have developed a retirement plan, considered how to handle health care issues as they age, developed a succession plan, or even developed an estate plan. Join specialists from the University of Delaware Extension and the University of Maryland Extension as they help prepare you for this process.

A four-part series for farm families planning for the next generation.

Session 1: Introduction of the topics and retirement planning.

Session 2: Health insurance in later years.

Session 3: Business planning and communications.

Session 4: Legal topics, planning tools, and finding the right team.

More information and registration is available here:

<https://go.umd.edu/5Qv>

Presented By



Weed Management in Pastures Webinar

Wednesday August 5, 2020 7:00-9:00 pm

Online by Zoom

Join Dr. Mark VanGessel, University of Delaware Extension Weed Specialist for another program in our Webinar Wednesday forage series. Managing weeds in pasture is a common question among horse owners and livestock producers. In this webinar you will learn about these plants we call weeds; why they are a concern for many owners and producers and what strategies you can use to control them. We will discuss both cultural and chemical methods for weed control and also briefly touch on the topic of toxic weeds.

To register: <https://www.pcsreg.com/weed-management-in-pastures>

Sponsored by Delaware Cooperative Extension, a joint effort between Delaware State University and the University of Delaware.

Climate Adaptation Fellows Program for Vegetable and Fruit Growers and Ag Advisors

Climate change is bringing challenges for vegetable and small fruit growers.

For farmers to reduce their risk, they need to adapt. To address this increasing need, the Climate Adaptation Fellowship was created. The program provides a peer-to-peer curriculum for farmers and advisors. Its framework is designed to integrate climate science with a land manager's knowledge.

Participants in the vegetable and fruit program will enhance their knowledge of climate impacts to vegetable and fruit farms in the Northeast. Accepted fellows will complete the program in pairs (farmers and advisors) to develop personalized farm adaptation plans and outreach materials to share with peers.

The Northeast Climate Adaptation Fellowship is open to commercial farmers in the Northeast U.S. (Maine, New Hampshire, Vermont, Connecticut, Massachusetts, Rhode Island, New York, Pennsylvania, New Jersey, **Delaware**, West Virginia, Maryland, Washington D.C) who grow vegetables and/or small fruit and to agricultural advisors who work with vegetable/small fruit farms in this region.

For more information go to:
<https://www.adaptationfellows.net/news/vegetable-fruit-program-now-accepting-applications>

Extension302 Podcast – A Fair to Remember (Your Give to the 2020 Delaware State Fair)

<https://www.udel.edu/academics/colleges/canr/cooperative-extension/about/podcast/>

The 2020 State Fair begins this Thursday, July 23rd, and we have the latest inside information for you! Today's special guest, Doug Crouse, is not only UD Extension's State Program Leader for 4-H, but also an executive board member and the treasurer of the Delaware State Fair.

What changes will you see at the state fair this year and how has the pandemic affected 4-H, FFA and other participants? Listen to find out!



USDA-FSA Office Visits by Appointment

USDA-Farm Service Agency offices in Delaware are open for in-office visits by appointment only. Please call your local office to make an appointment:

New Castle and Kent Counties – 302-741-2600, ext. 2

Sussex County – 302-856-3990, ext. 2



Soil Health Solutions
Monday, August 17, 1-4 PM
Online via Zoom

Please join us for an interactive webinar to address soil health challenges on all types of farms. Shannon Zezula, Indiana State Resource Conservationist will present about the process of finding soil health solutions based on individual farming situations. Participants will also have discussions about specific farming scenarios and find ways to improve soil health and productivity.

Please contact Jason Challandes at jchallandes@desu.edu or 302-388-2241 to register and you will receive a link to join.

Presented by Northeast SARE, Delaware Soil Health Partnership, Delaware State University and University of Delaware

Farmer Panelists Discuss Soil Health – Virtually

Tuesday, August 11, 2020 12:30-1:30 p.m.

A virtual farmer panel will discuss a soil health with Steve Groff, owner of Cover Crop Coaching, as moderator. Panelists include Blaine Hitchens, a Sussex County farmer and National Association of Conservation District Soil Health Champion from Laurel, Del., Steve Kraszewski, of Mason's Heritage in Queen Anne, Md. and Aaron Thompson, Thompson Family Farm in Hartly, Del. This event is free and preregistration is required.

“Due to COVID-19 we were unable to hold the annual soil health field day. However, we are very excited to offer this virtual event to allow farmers the opportunity to discuss topics related to soil health,” said Debbie Absher, director of agricultural programs at Sussex Conservation District.

Registered attendees will receive the webinar registration link one day prior to the event.

For more information or to register, visit www.sussexconservation.org/events or call Siobhan Kelley, communications and outreach specialist at SCD, 302-856-2105, ext. 122.

This event is presented by the Sussex Conservation District, Delaware Soil Health Partnership, Delaware State University, Northeast Sustainable Agriculture Research and Education program and the U.S. Department of Agriculture Natural Resource Conservation Service.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of July 16 to July 22, 2020

Rainfall:

0.01 inch: July 22

Air Temperature:

Highs ranged from 95°F on July 20 and July 21 to 80°F on July 16.

Lows ranged from 79°F on July 20 to 68°F on July 16 and July 17.

Soil Temperature:

84.0°F average

Additional Delaware weather data is available at <http://www.deos.udel.edu/data/>

Weekly Crop Update is compiled and edited by Emmalea Ernest, Associate Scientist - Vegetable Crops. Aisha Hoggard assists with web posting.

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