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

Sweet Corn

Trap counts are declining with cool weather. With temperatures below 82, it takes CEW eggs 3 days to hatch, thus allowing us to be on a 3-day spray schedule regardless of what material was used previously. Thursday trap counts are as follows:

Location	Blacklight Trap	Pheromone Trap
Dover	4	77
Harrington	3	17
Milford	14	64
Rising Sun	10	103
Wyoming	---	127
Bridgeville	2	59
Concord	12	---
Georgetown	---	---
Greenwood	6	41
Laurel	18	107
Newark	---	65 (7 d)

Cole Crops

Our newest cabbage planting has imported cabbageworm, diamondback moth, cabbage looper, and an occasional fall armyworm, beet armyworm, and corn earworm present. Beet armyworm, corn earworm, fall armyworm and diamondback moth are all generally resistant to pyrethroids. Torac is not labeled for cabbage looper.

Aphid pressure right now is fairly high. Among aphid products, Exirel and Torac provide excellent aphid control and good to excellent worm control.

Cucurbits

Continue scouting late cucurbits for aphids and for squash bug. Melon aphid populations are increasing rapidly in some areas and if present in large numbers can result in honeydew covering the pumpkins. This is especially true if pyrethroids were used earlier for squash bug or squash vine borer.

Scout for cucumber beetle rind feeding. If rind feeding is occurring, consider Assail, Lannate, or carbaryl (if plants are no longer flowering).

Tomatoes

Continue with worm protective sprays on late tomatoes.

Plectosporium Blight in Many Pumpkin Fields

Jerry Brust, IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu

Plectosporium blight can be seen in many pumpkin fields this year, not bad but still there. This disease will probably increase if we have more frequent rains. This fungal disease of pumpkin, zucchini and squash can cause yield loss if left uncontrolled. Plectosporium blight prefers warm, humid, or rainy weather

conditions. It overwinters on crop residue and can persist in the soil for several years.

Plectosporium blight can be recognized from the small white to light tan spots on leaves (Figure 1) and elongated lesions on stems and leaf petioles (Figure 2). On green fruit the lesions are very small white to tan flecks (Figure 3a) on more mature fruit the lesions are round to irregular shaped pimples on the surface of the pumpkin that often makes them unmarketable (Figure 3b). These fruit lesions also allow soft rot pathogens to penetrate into the pumpkin that will cause the fruit to 'melt-down' into a deflated mess. When stem and foliar lesions occur in large numbers, they can give a light gray or white appearance to the foliage. As the lesions increase in numbers and merge, they turn the vines and leaf petioles white (Figure 2). Severely infected pumpkin stems or petioles will become brittle and can split or shatter if disturbed (Figure 2).

When Plectosporium blight occurs, rotate away from summer squash and pumpkins for 2 years. Scout for disease and apply fungicides when disease first occurs. Thorough coverage of foliage, vines, and fruit is necessary for good control. Most of the time a protective spray of chlorothalonil or mancozeb will give you good protection from this disease, however in years where you have frequent heavy rains the disease control needs a boost with the addition of protective sprays by using something in rotation such as Cabrio or Flint Extra.

Figure 1. Plectosporium yellow-tan spots (lesions) on pumpkin leaf

Figure 2. Plectosporium on pumpkin leaf petioles-the petiole to the far right has split.

Figure 3. Plectosporium lesions on green fruit (A) and on orange fruit (B)

Fruit Crops

Scout Strawberries and Begin Neopestalotiopsis Management

Emmalea Ernest, Extension Fruit & Vegetable Specialist; emmalea@udel.edu

This season, some strawberry growers in Delaware have been contacted by their plug plant suppliers to alert them that Neopestalotiopsis (aka Pestalotia or Neo-P) has been present in the plugs they are producing. Nurseries are working to dispose of infected plants and prevent spread of the disease, however they cannot guarantee that the plugs that growers receive will be free of Neopestalotiopsis. Growers must decide whether to cancel orders or take plants that may have the disease.

Growers who are planting plugs from nurseries where Neopestalotiopsis has been identified should take action this fall to prevent development and spread of this disease in their strawberry crop. *All strawberry growers should be alert to symptoms of this disease in their fields.*

Know the Symptoms

Neopestalotiopsis causes leaf spot, crown infection and fruit rot. The leaf spot and crown infection symptoms are most relevant to fall disease scouting. Foliar symptoms are tan leaf lesions which develop small black fungal structures (pycnidia) under wet conditions. If crowns become infected the whole plant will wilt, but leaf lesions may not be present.

Leaf symptoms typical of Neopestalotiopsis

Leaf symptoms typical of Neopestalotiopsis

Black tendrils of spores emerging from pycnidia on a strawberry leaf infected by Neopestalotiopsis.

Black pycnidia form in lesions of leaves infected by Neopestalotiopsis.

Neopestalotiopsis crown infection showing characteristic reddening of leaves, wilt and stunting of new growth.

Cull Unhealthy Plants
Inspect transplants before planting and do not plant transplants that appear unhealthy. Destroy culled transplants. Throughout the fall, scout for plants with symptoms of Neopestalotiopsis and remove and destroy symptomatic plants. Plants with suspected disease can be submitted to the UD Plant Diagnostic Clinic by bringing them to any of the county Extension offices.

Fall Fungicide Applications
Thiram and Switch are the two fungicides recommended for Neopestalotiopsis control in the Strawberry section of the Mid-Atlantic Commercial Vegetable Production Recommendations. Bill Cline from NC State recommends reserving Switch for use only in the spring, since it is also important for preventing Anthracnose and Botrytis fruit rots, and overapplication risks development of fungicide resistance. His recommendation is to use Tilt, Rhyme or Inspire (collectively limited to 4 applications) in rotation with Thiram for fall applications. Start fungicide applications right after planting and make repeat applications every 7-14 days. If weather conditions are wet and more conducive to disease development use the 7-day spray interval. Continue fungicide applications until temperatures are consistently below the temperature range conducive to this disease, 50-86 °F. Note that disease symptoms can be observed at temperatures as low as 41 °F if conditions are wet.

Avoid Physically Moving the Disease
Neopestalotiopsis spores can be spread on workers or equipment. It is important to sanitize tools and equipment to prevent the movement of the disease in the field or between fields. Avoid working with plants under wet conditions.

Additional Articles on Neopestalotiopsis

Dramatic Neopestalotiopsis Disease in Strawberry Tips and Plug Plant Production Nurseries

Neopestalotiopsis Leaf, Fruit, and Crown Rot of Strawberry

Best Management Practices for Neopestalotiopsis

Strawberry Disease Identification: Neopestalotiopsis (aka Pestalotia) or a More Traditional Disease?

Agronomic Crops

Agronomic Crop Insect Scouting

David Owens, Extension Entomologist,
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Soybean
Continue scouting for podworm and stink bug in double crop beans. Stink bug thresholds increase to 7 once we move into R6.5, and up to 10 bugs/15 sweeps past R7. Podworms may still be present and active in double crop beans, especially the youngest beans. Also scout for defoliation. Soybean looper is active. A ballpark level of concern that NCSU uses for loopers is close to 1 looper per sweep. If loopers are present in your field and defoliation exceeds 20% and the beans have not yet reached R6, treatment may be advised. Loopers can be difficult to kill with insecticides, spinosyns, intrepid edge, and steward tend to be the most consistent products further south.

Alfalfa
A question came in last week about worms in alfalfa. A defoliation threshold that Texas A&M uses is 10% defoliation and greater than 7 defoliating worms per sweep.

Sorghum
Continue scouting for sugarcane aphid through the soft dough stage. We should be approaching that in the majority of late sorghum, but very late sorghum might not yet have reached soft dough. The threshold for sugarcane aphid is 30% of plants infested with areas of honeydew slicks present.

Small Grains
Small grain planting is right around the corner. Ask your seed dealer if your wheat varieties have

tolerance to BYDV. Malt barley does not have tolerance to BYDV, an insecticide seed treatment will slow down aphid colonization, potentially as late as late Fall when cold weather slows aphid activity and reproduction down. Varieties without tolerance to BYDV or barley (and especially malting barley) should be scouted for aphids. For barley, Endigo is an excellent product offering long residual activity. For wheat, pyrethroids do a very good job on aphids, but the residual activity is not quite as long.

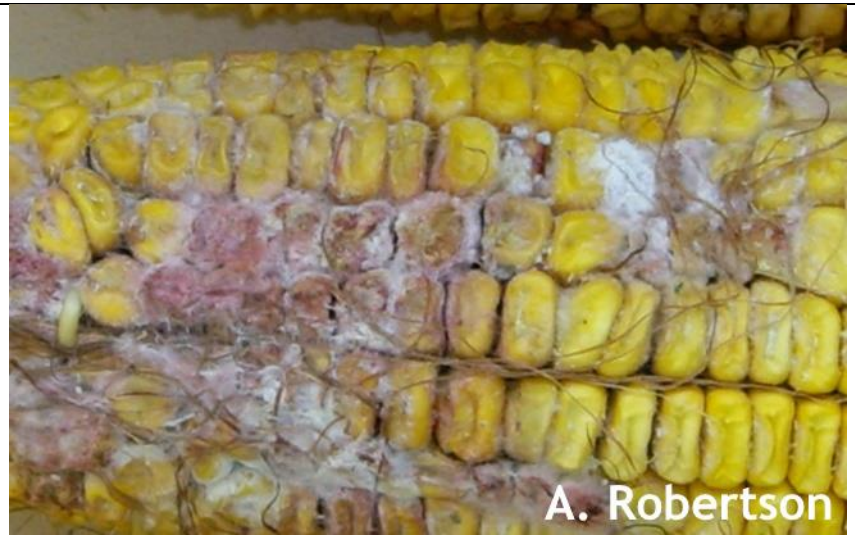
Corn Ear Rots

Alyssa K. Betts, Extension Field Crops Pathologist; akoehler@udel.edu

This has been a tough season on corn. The drought stress and heat of early summer impacted pollination and tip fill. Particularly in dryland fields, you may also be observing corn with lower test weights and more ear rots than usual. Ear rots can be caused by several different types of fungi. They can be problematic by reducing yield, kernel quality, and in some cases producing mycotoxins that are harmful to humans and livestock. Symptoms are often observed first at the tip of the ear but can be scattered throughout the ear. Infection usually occurs through silks and at locations of insect wounds. Hybrids with reduced husk coverage may have higher insect wounding and increased ear rot incidence. Both ear and stalk rots (see last week's article) are favored by dry early season conditions that add stress to the corn plant. The table below highlights some of the most common corn ear rots.

Ear Rot	Fungus Name	Identification Features	
Aspergillus ear rot	*Aspergillus flavis*	Powdery green to yellow-green spores. Often begin at the tip of the ear but can be scattered throughout. Associated with insect, bird, or hail injury and hot, dry conditions. Stressed plants are more susceptible.	 Grey-green, powdery mold indicative of Aspergillus ear rot.

Diplodia ear rot	*Stenocarpella maydis*	White mold. Ears may drop early with bleached husk while corn plant is still green. Black raised bumps (pycnidia) may be visible on the husk, kernels, or cob cross section.	 White mold on corn ear from Diplodia ear rot.
Fusarium ear rot (Pink Ear Rot)	*Fusarium* species	White, pink, gray colored kernels that can have streaking or “starbursts”. Can be clustered or scattered throughout the ear. May be present at stink bug or other insect wounds. This is the typically our most common ear disease.	 Fusarium ear rot symptoms on kernels.

Gibberella ear rot (Red Ear Rot)	*Fusarium graminearum* (*Gibberella zeae*)	Pink or red colored molding. Typically begins at the tip of the ear. Silks and husk may stick to the ear from excessive mold. More common when it is cool and wet during the grain fill period.	 Gibberella ear rot on hail damaged ear.
Penicillium ear rot	*Penicillium* species	Green to blue-green powdery mold, kernels may look streaked or bleached. Usually at the tip of the ear. Primarily occurs on ears with insect or mechanical damage. Fungus can colonize within the kernel causing a blue discoloration in the embryo known as “blue-eye”.	 Penicillium ear rot at the tip of the ear.

Trichoderma ear rot	*Trichoderma viride*	Dark green mold on or between kernels. Often covers the entire ear. Associated with injury when ears are developing.	 Trichoderma ear rot often covers the entire ear.

Of these ear rots, I have been getting the most questions about Aspergillus due to the mycotoxin it produces called aflatoxin. There are a few different types of *Aspergillus*, but *Aspergillus flavus* is the most common species. This is not a disease we often worry about. Colonization increases in years with drought-stress or if kernels have been damaged by insects or other causes. The powdery gray-green or yellow-green spores may puff like dust when you pull back a corn husk and grow on and between kernels. Aflatoxin is carcinogenic and regulated at an "action level" of 20 parts per billion (ppb). Corn contaminated at levels greater than 20 ppb cannot be sold for interstate commerce. Aspergillus has been present in VA this season and will likely be screened for at DE elevators as well.

A few things to keep in mind are:

1) There are many ear rots so not everything is going to be *Aspergillus*. If you have questions or need help with ID, let me know.
2) While *Aspergillus* mold increases risk of aflatoxins, just seeing mold does not guarantee that contamination will be high. Contamination can also vary from kernel to kernel.
3) If you do have a field with *Aspergillus,* while we cannot reduce the preharvest contamination at this point, steps can be taken to reduce postharvest aflatoxin contamination.

If you think you have a field with aflatoxin, harvest as soon as corn reaches maturity. Infection is favored by broken or damaged kernels, so take time to adjust combine settings and try slower header speeds to minimize kernel damage. Increasing fan speed can help to remove cracked or light-weight underdeveloped kernels to reduce contaminated grain. In cases where you are storing your grain, it is recommended to harvest at higher moisture to reduce field exposure, but corn should be dried to 15% moisture or less as quickly as possible (within 24-48 hours). It is important to match drying capacity to holding capacity of wet corn. Problems are more likely in dryland fields than irrigated, so it is best to harvest outside of the pivot separately and store that grain separately so that good corn is not contaminated. Follow good sanitation and clean out previous season debris from bins.

General

Guess The Pest! September 6th

David Owens, Extension Entomologist,
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This week, I had a couple of trivia pests in mind. This is one that is a MAJOR corn pest out west and in the Great Lakes region, apparently an occasional to minor pest in PA and a curiosity here. I was very surprised to find one in a field. What is it?

Enter your guess here: https://docs.google.com/forms/d/1oz5-yCm8xifZtDlvZ-vPbd8a0GR-V6H9ddb9fhAyzzY/edit.

Guess The Pest! August 30th Answer

David Owens, Extension Entomologist,
owensd@udel.edu

Well, I final updated the form. Congratulations to Brian Farkas and to Chris Cawley for correctly identifying the two earworms in the photos. The first was a small corn earworm larva. You can tell by its bristly appearance and generally dark color. That color will change. The second photo was of a young yellow striped armyworm. You can see the fain stripes down the side of the body. The segments behind the head are slightly larger than the remaining segments, and they have larger black spots behind the true legs which you can almost see in the photo on the side of the body. The third was a corn earworm that had just hatched. Neonates tend to be a translucent orange color.

Announcements

Stormwater Seminar - Stormwater 101

The Sussex Conservation District (SCD) in partnership with the University of Delaware Cooperative Extension (UDCE) is pleased to announce a series of three seminars aimed at improving water quality through effective stormwater management and best management practices (BMP).

The seminars are designed to equip homeowners, homeowner associations, and industry professionals with the knowledge and tools needed to become better environmental stewards. According to the EPA, stormwater runoff from yards, streets, and other areas is one of the most significant sources of waterway contamination, making this education critical for safeguarding Delaware's waterways.

Stormwater 101 – Wednesday, Sept. 18, 2024
Jessica Watson, SCD sediment and stormwater program manager, will provide an overview of the stormwater program in Delaware, including regulations, types of stormwater systems, required maintenance and enhancement options.
Seating is limited, and preregistration is highly encouraged.

Approved: 1 DE NM CEU

For additional information the link is provided below
https://www.sussexconservation.org/events/ss-01-2024

2024 Beginning Farmer Program

Wednesdays & Saturdays September-December
University of Delaware, Fischer Greenhouse
533 S. College Ave, Newark, Delaware 19716

The Delaware Beginning Farmer Program is for new and beginner farmers working in small-scale vegetable and/or fruit production. Through hands-on training, demonstrations, workshops, field trips and farm tours, as well as self-study, growers will spend an entire season learning and growing with Delaware Cooperative Extension, and other invited agriculture industry professionals

Although not limited to the following topics, this training will explore the fundamentals of soil fertility and health, basic crop production, integrated pest management, food safety, and business planning and development.

This training will also provide an excellent networking opportunity. Sessions are covered by one affordable registration fee of $75. Sessions are held at the University of Delaware Cooperative Extension office and Fischer Greenhouse on the University of Delaware campus.
Sessions are held at Fischer Greenhouse on the College of Agriculture and Natural Resources' campus in Newark, unless otherwise noted.

- Wednesday, September 11, 6-8 pm
  Course Orientation, Soil Basics
- Saturday, September 14, 9-11 am
  Greenhouse Production/Tour
- Wednesday, September 25, 6-8 pm
  Variety Selection
- Wednesday, October 9, 6-8 pm
  Small Farm Business Planning
- Saturday, October 12, 9-11 am
  Field Trip to Against the Grain Farm at William Penn Farm
- Wednesday, October 23, 6-8 pm
  Weed Identification and Management
- Wednesday, November 6, 6-8 pm
  Integrated Pest Management: Insect and Disease Pests

- Saturday, November 9, 9-11 am
  Plant Diagnostic Clinic, UD Fresh to You

- Wednesday, November 20, 6-8 pm
  Small Animals

- Wednesday, December 4, 6-8 pm
  Delaware Beginning Farmer Resource Panel with DDA, NRCS, Farm Bureau and others

Register here: http://www.udel.edu/0012105

If you have any questions about the program, please reach out to either Carrie Murphy (cjmurphy@udel.edu) or Nick Adams (naadams@udel.edu)

Category (03) Ornamental and Turf Pre-Exam Training

October 16, 2024, 8:00 AM to 12:00 PM

Delaware State Fair Grounds

AG Commodities Building - Murphy St. Harrington, DE 19952

The Delaware Department of Agriculture in conjunction with University of Delaware Cooperative Extension is excited to bring to your pre-exam training designed to assist with the content connected to the DDA Ornamental & Turf (Category 03) exam. The pre-training will NOT cover all of the material on the exam. The training will consist of 6 categories of emphasis and will cover identification, control, and various best management practices (BMP's) that applicators need to know or study as part of the category (03) Ornamental & Turf exam. The presenters will be Amanda Strouse (DDA) and John Emerson (UD). Both the training and the exam will be at the AG Commodities Building at the DE State Fairgrounds.

Use the following link to register:

https://www.udel.edu/0012295

Credit Opportunity Available for Carvel Field Day Online Activity

Recordings of the Agronomic Crop and Fruit and Vegetable Tours held at Carvel on August 7, 2024, are now available along with an opportunity to earn credits by watching the videos.

https://www.udel.edu/academics/colleges/canr/carvel/current-research/2024-field-crop-tours/

Each tour contains five videos representing the stops on each tour. To obtain credit for a full tour, all five videos for that tour must be viewed. Viewers are required to submit the two keywords that appear randomly in each video (a total of 10 keywords per tour). Keywords will appear as closed captions for approximately 10 seconds. **The opportunity to earn credits will expire on December 31, 2024**. Visitors may earn credits for one or both tours. Use the google document from the link above to submit for credits.

Please verify your credits have been received by contacting Karen Adams, adams@udel.edu **after January 3, 2025.**

Watermelon and Pumpkin Grower Biofumigation Study Survey

Online Activity

Watermelon and pumpkin growers, we are seeking survey responses to evaluate your familiarity with using biofumigation to reduce phytophthora and root-knot nematodes in these crops. We would like to hear about your experiences with this topic. The survey should take no more than five minutes to complete. Here is the link to the survey:
https://delaware.ca1.qualtrics.com/jfe/form/SV_02i7KXdpzDhbgsS

Contact Nate Bruce at nsbruce@udel.edu or 302-362-7616 if you have any questions.

Grain Marketing Producer Survey

Online Activity

Grain marketers, the University of Delaware, in collaboration with the Universities of Kentucky and Nebraska Lincoln, seeks your input on how you make grain marketing decisions on your own operation. The survey will help inform us to understand the risks and factors involved in making these decisions. In addition, data will be used to help us refine outreach education on grain marketing. Your individual survey responses will remain confidential as data will be aggregated. The survey will take 10 minutes or less to complete. Below is both a link to the survey and a QR code.

Link to Qualtrics survey:
https://delaware.ca1.qualtrics.com/jfe/form/SV_0JpiRk4gHsN2yHQ

QR Code:

Contact Nate Bruce at nsbruce@udel.edu or 302-362-7616 if you have any questions.

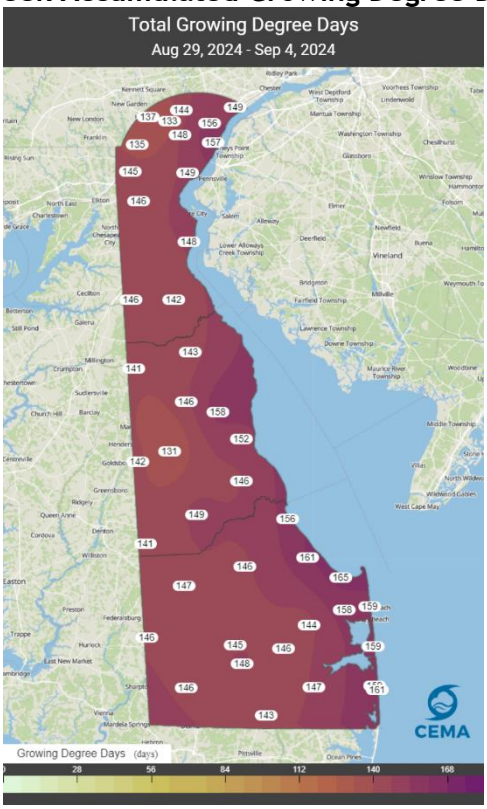
Maryland Pesticide Disposal Program

Maryland Department of Agriculture Pesticide Regulation Section is sponsoring a Pesticide Disposal Program. Registrations are available now and can be obtained by contacting their office at 410-841-5710 or on the website at https://mda.maryland.gov/plants-pests/Pages/Pesticide-Disposal-Program.aspx.

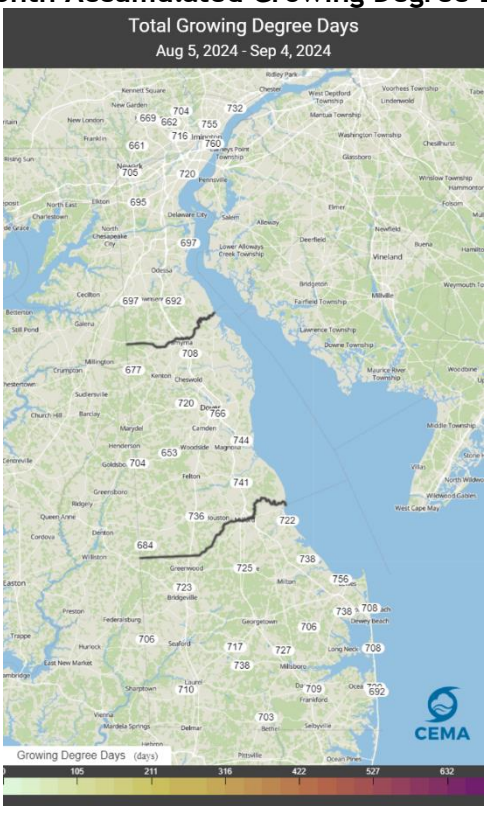
This program is FREE to all ag producers on a first-come, first-served basis. Commercial pest control businesses and applicators, including public agencies generally cannot participate. Limited space may be available.

Weather Summary

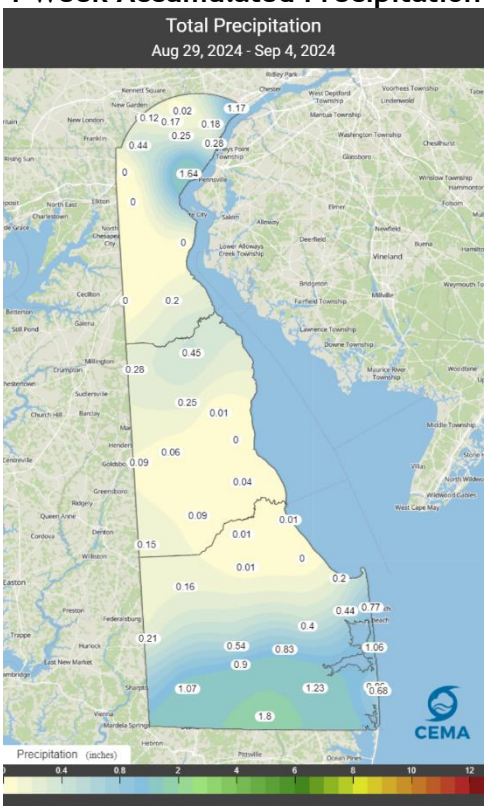
1 Week Accumulated Growing Degree Days



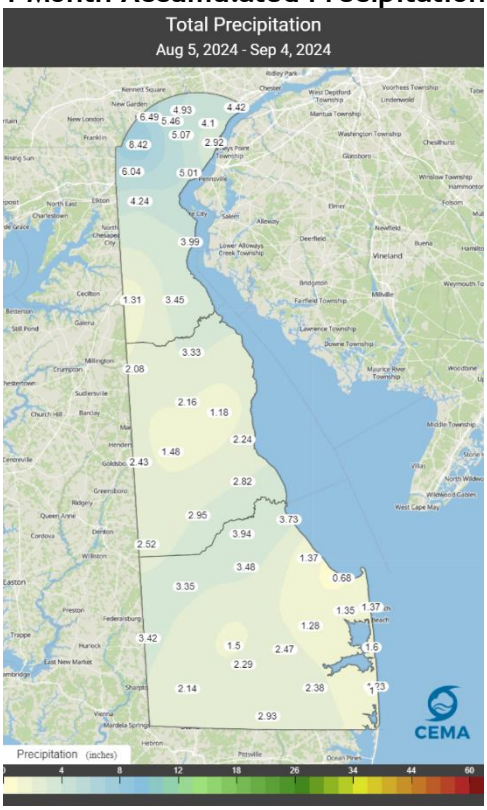
1 Month Accumulated Growing Degree Days



1 Week Accumulated Precipitation



1 Month Accumulated Precipitation



Weekly Crop Update is compiled and edited by Emmalea Ernest - Extension Fruit & Vegetable Specialist, Drew Harris – Kent Co. Ag Agent and Lyndsie Mikkelsen - Fruit and Vegetable Agent