

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 fluctuating quite a bit, with some locations higher and others fairly low. This time of year, and particularly with the hot weather we have had, we have had even low trap counts result in a large percentage of damaged ears in untreated check plots. If the daily temperature is above 82 degrees, I advise that spray schedules be tightened 1 day.

Trap counts from Thursday are as follows:

Trap Location	BLT - CEW	Pheromone CEW
	3 nights total catch	
Dover	2	75
Harrington	0	31
Milford	2	51
Rising Sun	1	43
Wyoming	0	21
Bridgeville	1	39
Concord	3	28
Georgetown	1	14
Greenwood	0	16
Laurel	4	68
Seaford	7	---
Lewes	---	---
Millsboro	3	12

Brassicas

Fall brassicas are either just transplanted or soon to be transplanted. Scout seedlings and new transplants for worm damage. Active worms include the various **armyworm species** in addition to **imported cabbageworm**, **cabbage looper**, and **diamondback moth**. Thresholds for young plants is 20% infestation. Adjust your spray pattern such that spray is getting sideways to the undersides of leaves. Use adjuvants to help spread the droplet out on the waxy leaf surfaces. If using Radiant or a diamide (Coragen, Exirel, Harvanta), do not use a sticker. As much as possible, use a treatment window approach alternating among two modes of action during the first generation (roughly 30 days) followed by completely different modes of action. Save broad spectrum materials (Lannate, Orthene, Dibrom, pyrethroids) for later in the season. I have heard that the combination of a pyrethroid + organophosphate can result in some synergism for certain pests, but not sure if this holds true for diamondback moth. Also check your labels to ensure that your selected insecticide is indeed labeled for the particular crop. Many labels exclude certain cole crops. For example, Orthene is only labeled for Brussels sprouts and cauliflower.

Tomato

Corn earworm and **yellow striped armyworm** are active in tomatoes, and I have seen quite a few worm damaged tomatoes recently. Use high water volume, high pressure, and multiple nozzles aimed at the sides of the row to ensure good coverage. We have a plethora of 'worm' materials labeled for tomato, including Entrust and Radiant, Proclaim, Bt (best on small worms but has very little residual), Rimon, Intrepid,

Avaunt, and diamides Coragen and Exirel). **Stink bugs and leaf footed bugs** are also a threat in tomato, if you have to battle them, there are several good premix options that combine a pyrethroid and a neonicotinoid. The neonic component will not affect worms. Among the pyrethroids, bifenthrin is generally thought to be the best for stink bugs, while recent tests in sweet corn show beta cyfluthrin to be a good pyrethroid for corn earworm. Venom and Scorpion are also very effective stink bug products, but will not target worms. The vegetable guide also lists Voliam Flexi which has a neonic and a dimaide.

Spider Mites

Spider mites continue to be active in vegetable fields. They can be pretty hard to dislodge in vegetables on account of frequent fungicide applications and broad spectrum insecticides targeting other pests. Rotate among product modes of action, use high pressure, and an appropriate adjuvant for the material (no stickers or 'sticky' fungicides for translaminar products). Some products take longer to result in a mite population decrease than others.

[Guess The Pest](#) is taking a brief hiatus this week. Many thanks to those who have logged guesses. For those of you who have not, there is still time!!!

More Cover Crop Decisions for Vegetable Growers - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

With cover crop season coming up, vegetable growers will have decisions to make on what cover crops to plant and how best to grow and use them. The following is a repeat of an article revisiting this topic.

Cover crop acreage has been growing in the region, largely due to nutrient management efforts, cost share programs and recent programs encouraging farmers to grow cover crops for soil health benefits and soil improvement.

Nutrient management goals and soil health goals are not necessarily the same. In nutrient management-based cover crop programs, the

goals are to have crops that can take up residual nitrogen and provide cover to reduce soil erosion losses. Non-legumes predominate, with most of the acres planted in small grains such as rye and some recent use of radishes. No fertilizer can be used with cover crops in these programs. In this case the answer to the question above is that a cover is being grown. While there will be soil health benefits, they are not maximized.

In contrast, when soil improvement is the primary goal, the cover crops are grown as crops. You are growing plants to maximize the benefits they provide. To increase organic matter and improve soil health the main goal is to produce maximum biomass above ground and below ground. A second important goal is to provide different types of organic matter (such as with cover crop mixtures) to support a diverse soil microbial environment.

In other cases, the goals will be different. With leguminous cover crops a goal may be to maximize the amount of nitrogen fixed. With soil compaction reducing crops such as radishes, the goal is to maximize the amount of "biodrilling" (i.e. the amount of tap roots being produced). With biofumigant crops, the goal is to maximize the production of fumigant-like chemicals by the crops. With mulch-based systems, the goal is to maximize above-ground biomass.

What these soil improvement and specific use goals have in common is the need to treat the cover crop as a crop to optimize plant growth. This includes **seeding at the proper rate** to achieve optimal stands, **planting at the right time**, using **best seeding methods** to get maximum seed germination and plant survival, **having sufficient fertility** to support good plant growth, **providing water** during dry periods, **managing pests** (insects, diseases, weeds), and **inoculating legumes**. If cover crop mixtures are being used, the ratios of seeds being planted must be considered to have the **best balance of plants** in the final stand.

The best cover crop stands are obtained with a drill or seeder that places the seed at the proper depth, at the proper seeding rate, with good soil to seed contact. Fertilization and liming programs should be used to support season-long growth - fertilizers and other soil amendments

will be necessary in most cases. Nitrogen will need to be added for non-legumes.

When the crop is terminated is also key. The cover crops should be allowed to grow to the stage that maximizes the benefits they have to offer before killing the crops. Allowing a winter cover to grow for an extra week in the spring can make a large difference in the amount of biomass produced.

Winter-Killed Cover Crops for Vegetable

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

Cover crop decisions for vegetables should be made soon for this fall and next year's crops. The following is a reprint of information on winter killed cover crops for vegetable systems

Cover crops that put on significant growth in the fall and then die during the winter can be very useful tools for vegetable cropping systems. These winter-killed cover crops add organic matter, recycle nutrients, improve soil health, and allow for earlier spring vegetable planting.

Winter-killed cover crops that are late summer and fall planted include spring oats, several mustard species, and forage and oilseed radish. Earlier planted summer annuals (millets; sorghums, sudangrasses, and hybrids; annual legumes such as sun hemp or forage soybeans; buckwheat and many others) can also be used as winter killed species. Timing of planting will vary according to the species being used and winter killed species selection will depend on when fields will be available for seeding. Summer annuals should be planted in late July or during August for use in a winter killed system to obtain sufficient growth.

Spring oats and mustard species can be planted from late August through September. For best effect, forage and oilseed radishes should be planted before the middle of September. Spring oats, radishes and mustards are not suited for October or later planting because they will not produce adequate fall growth.

All of the winter killed non-legumes mentioned above will benefit from the addition of 30-60 lbs of nitrogen.

The following are several options for using winter killed-species with vegetables:

Compaction mitigation for spring planted vegetables

Forage radishes have worked very well as a winter-killed cover crop in fields with soil compaction. The extremely large taproot penetrates deep into the soil, and after winterkilling, will leave a large hole where future crop roots can grow. Oilseed radish also provides considerable "biodrilling". Winter killed radish cover works well with spring planted crops such as spinach, peas, early sweet corn, and early snap beans. One issue with radishes is that in mild winters they may not fully winter kill.

Soil health benefits for early planted vegetables

A wide range of early planted vegetables may benefit from winter killed cover crops. For example, peas no-till planted or planted using limited vertical tillage after a winter killed cover crop of forage radish, oilseed radish, or winter killed mustard have performed better than those planted after conventional tillage. Early sweet corn also has potential in these systems as do a wide range of spring vegetables including spinach, potatoes, and cabbage. Winter killed radishes and mustards also have the advantage of outcompeting winter annual weeds leaving relatively weed free fields and also in recycling nutrients from the soil so that they are available in the spring for early crops (decomposition has already occurred).

Mixed systems with windbreaks for plasticulture

By planting planned plasticulture bed areas with winter killed cover crops and areas in-between with cereal rye you can gain the benefits of these soil improving cover crops and eliminate the need to make tillage strips early in the spring. The winter killed areas can be tilled just prior to laying plastic.

Bio-strip till

By drilling one row of forage or oilseed radish and other adjacent rows with rye or other small

grains, you can create a biodrilled strip that winter kills and that can be no-till planted in the spring without the need for strip-till implements. This opens up dozens of options for strip tilling (seed or transplanted) spring vegetables.



Fall growth on mustards and radishes that will then winter kill. A potential winter kill mix would include a radish, a mustard, and spring oats.

Stop Use Order for Some Organic Products

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

For our organic vegetable growers in the Mid-Atlantic the California Department of Food and Agriculture's State Organic Program issued a STOP USE notice for **W.O.W. (WHACK OUT WEEDS!)** and **ECOMIGHT-PRO** products, manufactured by EcoMight LLC.

W.O.W. (WHACK OUT WEEDS!) and **ECOMIGHT-PRO** product samples have **tested positive for the presence of synthetic chemical compounds Glyphosate; Bifenthrin; and Permethrin.** Additionally, the **W.O.W. (WHACK OUT WEEDS!)** product samples tested positive for the presence of synthetic chemical compounds **Cypermethrin and Carbaryl.** These identified synthetic chemical compounds are prohibited for use in organic production by the U.S. Department of Agriculture's National Organic Program.

Fruit Crops

Sooty Blotch and Flyspeck in Apples - *Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu*

August and September are the time for sooty blotch and flyspeck (SBFS) diseases of apples to build up. These problems are caused by many different fungi and are managed together.

Sooty blotch appears as dark, irregularly shaped areas of black smudges on fruit. Flyspeck develops distinct black, pinhead-sized spots, generally clustered in groups of 10 to 50. These signs are fungal growth on the surface of apples and often appear together. Other than causing cosmetic damage, SBFS is not technically a disease, as it does no real harm to apples. However, significant blemishing causes fruit to be downgraded and not to be saleable.

The different life cycles for the many fungi that may contribute to the SBFS disease complex are not well understood. Different species of fungi predominate in different apple production regions, but all have life cycles that are similar enough that symptom development can be reasonably well predicted, and a single management approach used.

Infection by SBFS fungi occurs soon after fruit set, though symptoms may take several weeks to show, depending on weather. Disease development is dependent on high levels of humidity in the tree canopy. Extended wet weather or periods of high humidity enable SBFS fungi to colonize apples and grow, but they grow slowly if at all during dry periods. New infections can occur throughout the summer to harvest. The fungi may remain invisible for several weeks, first appearing in late summer or early fall. Some SBFS fungi apparently have secondary spore production and infection cycles related to rain and high humidity, with higher rates of disease occurring in years with heavy or frequent rain. These fungi appear to overwinter on plants adjacent to apple orchards. The source of many of the SBFS fungi is wild plant hosts in woods or hedgerows adjacent to orchards such as wild and cultivated brambles

Fungicides applied approximately every two to three weeks, starting with second cover, will generally control SBFS. The most effective fungicides against SBFS include the strobilurins, Flint, Sovran, Pristine, and thiophanate-methyl, Topsin, T-Methyl. Captan is not as effective, but provides good control, and is a useful multi-site fungicide to mix with the more effective single-site materials for resistance management. Inspire Super and other pre-mixes that contain a QoI (Luna Sensation, Merivon) also provide good control.



Sooty blotch and flyspeck of apple. Photo by Bruce Watt, University of Maine, Bugwood.org

SBFS blemishes may be removed or significantly reduced using postharvest fruit dip treatments in low-concentration chlorine bleach solutions (500 to 800 ppm chlorine) followed by brushing on a commercial grading line.

Anything that slows drying in apple tree canopies encourages SBFS development. So larger trees that are poorly pruned develop more disease. Similarly, trees in areas where air circulation is poor develop more disease. Cutting back these border plants, particularly well-known hosts such as wild blackberries, reduces disease pressure. Keep grass in the orchard mowed to reduce humidity in tree canopies.

Apple cultivars vary in the amount of SBFS at harvest, but this is primarily related to harvest date rather than resistance pathogen colonization. Later harvested cultivars have the highest SBFS incidence. Lower SBFS incidence on the earlier maturing cultivars apparently results

from disease avoidance, as these apples are exposed to fewer hours of wetting and high relative humidity, environmental factors favorable for growth of SBFS fungi.

This article was adapted from the New England Tree Fruit Management Guide

<https://netreefruit.org/apples/diseases/sooty-blotch-and-flyspeck>

Agronomic Crops

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

Soybean

Continue scouting for **corn earworm** and **stink bugs**. Especially in double crop soybean, pay attention to defoliation. **Green cloverworm** populations have increased a bit during the past 10 days, and **soybean looper** are starting to show up. We are catching quite a **few green stink bugs** at some of our trapping locations. As a general reminder, stink bugs tend to have very aggregated distributions in fields, meaning a subsection of the field may only require treatment. Our thresholds for stink bugs (green, brown, brown marmorated, dusky, and red shouldered combined) is 5 per 15 sweeps. The typical earworm flight this time of year is off to a bit of a slow start. Pay special attention to double crop soybean. As a reminder, NCSU has an earworm threshold calculator: <https://www.ces.ncsu.edu/wp-content/uploads/2017/08/CEW-calculator-v0.006.html>.

Guess The Pest is taking a brief hiatus this week. Many thanks to those who have logged guesses. For those of you who have not, there is still time!!!

Announcements

Pesticide Safety Exam Reviews

Beginning in March the Delaware Department of Agriculture Pesticide Section will provide a Pre-Certification Pesticide Core Exam Review. This review will provide essential information, covering laws, equipment, personal safety and more to help you prepare for the core certification exam.

The core exam is for private pesticide applicators and a prerequisite for all commercial pesticide applicators.

2021 Pesticide Exam Dates

Wednesday, September 29, 2021

Wednesday, November 17, 2021

Schedule for Exam/Review Dates

Core Exam Review: 9 – 11:30am

Lunch Break

Pesticide Testing for ALL: 1 – 4pm

You may choose to test in the afternoon of the review or on another testing date.

Sign up is free!

Log into your account on dda.force.com/pesticide then click on Exam Registrations.

For more information on this training course and testing please contact Amanda Strouse at amanda.strouse@delaware.gov or 302-698-4575.

COVID-19 Vaccination Opportunities in Delaware

COVID-19 vaccination is currently available to Delawareans ages 12+ at numerous sites throughout the state. Some sites require an appointment and others offer walk-in hours. Information about vaccine sites and appointments is online at <https://coronavirus.delaware.gov/vaccine/where-can-i-get-my-vaccine/>.

Mental Health First Aid Training

What is this training about?

The Mental Health First Aid training is an 8 hour evidence based program that introduces participants to risk factors and warning signs of mental illnesses,

builds understanding of their impact, and overviews common ways to help and find support. Using interactive educational methods, you'll learn how to offer initial help in a mental health crisis and how to connect with the appropriate level of care. You will also receive a list of community healthcare providers and national resources, support groups, and online tools for mental health and addictions treatment and support.

What is the training format?

The course will be offered in two parts. The first part is offered online in a self-study format, takes about 2 hours, and needs to be completed before the live session. The second part will be offered live and virtually via a Zoom connection. This session will be held from 9am-3pm. You will receive the link for the self-paced session and Zoom info for the live session after you have registered. You need to register by the dates listed below to be able to attend the schedule live Zoom training date.

Why attend?

In Delaware our agriculture community is facing many stressors. Those who are in the position to consult and aid them need to know the signs, symptoms and strategies to best serve them. Farm family members also need to know how best to help their loved ones. This training is being taught by instructors from the Delaware Mental Health Association.

A certificate of completion is provided to attendees who attend all 8 hours of the training.

There are four dates for the Zoom session. Seating is limited. Please choose only one:

Mental Health First Aid Zoom Sessions with Registration Links

Friday, September 24, 2021 9 a.m.–3 p.m. Register by August 24

<https://www.pcsreg.com/mental-health-first-aid-training-sept-2021>

Friday, October 5, 2021 9 a.m.–3 p.m. Register by September 5

<https://www.pcsreg.com/mental-health-first-aid-training-oct-2021>

This training is underwritten by the Sustainable Coastal Communities Project, Delaware Farm Bureau

and University of Delaware Cooperative Extension.
These organizations are equal opportunity providers.

Nematode Field Day

Thursday, August 19, 2021 3:00-6:00 p.m.
Carvel Research & Education Center
16483 County Seat Hwy
Georgetown, DE 19947

The UD Nematode Field Day will be held at the Carvel Research and Education Center August 19 from 3-6.

Covered topics will include management strategies, soybean cyst nematode seed treatments and resistance genes, updates on lima bean resistance breeding for root knot nematodes, and updates on corn nematode surveys from 2021. Demonstrations will be set up for digging SCN root samples, collecting and sending soil samples, and viewing examples of root knot nematodes in vegetable crops.

Registration information can be found at <https://www.pcsreg.com/ud-nematode-field-day>.

Please email Alyssa akoehler@udel.edu with any questions.

Extension302 Podcast

Episode 22: Facing Fake News

Only 26 percent of Americans are confident they can recognize fake news. Are you one of them? The crew sits down with Dr. Cara L. Cuite (Rutgers) to discuss the rise of misinformation and how it might be affecting you.

To listen, go to:

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

Virtual Professional Development Opportunities

Presented by DSU Cooperative Extension & Northeast SARE

With guest, Dr. Nancy Franz

Professor Emeritus, Iowa State University, School of Education

Getting Your Point Across

August 23, 2021, 1:30-3:00 PM (EDT)

Tips and tools for using storytelling to engage your audience, encourage behavior change, and improve your success stories.

Improving Your Outreach Strategy

September 8, 2021, 10:00-11:30 AM (EDT)

Using situation analysis and needs assessment techniques to better serve your constituents and be more efficient.

Register for either or both here:

<https://forms.gle/9MyG6FKdgDnCdvsSZ8>

Email jchallandes@desu.edu if you have any questions.

Cooperative Education in Agriculture, Youth Development, and Home Economics. Delaware State University, University of Delaware and the United States Department of Agriculture cooperating, Dr. Dyremple B.

Marsh, Dean and Administrator. It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age, or national origin.

Tick Academy

September 13 - 15, 2021

Online

The Tick Academy is the premier event for pest control professionals, educators, students, researchers, public health professionals, public-space managers and citizen scientists interested in learning more about what they can do to stop the spread of ticks and tickborne diseases in their communities.

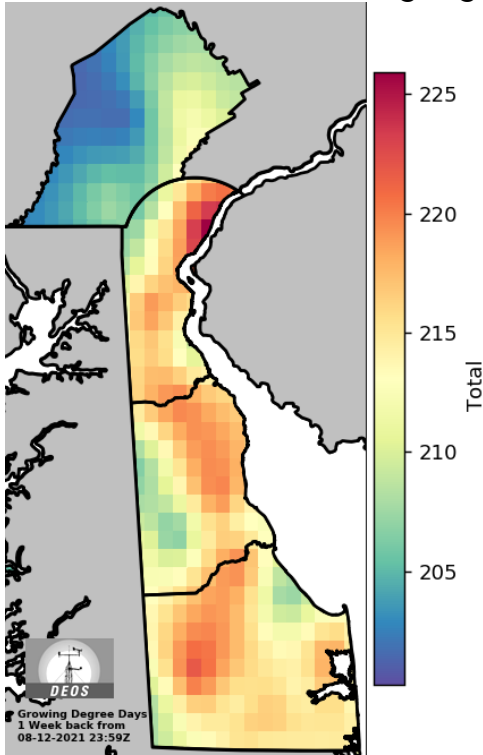
This virtual event will feature twelve presentations over three, four-hour sessions where presenters will share the newest information about tick management, tickborne disease prevention, recent discoveries of emerging pathogens, public perceptions of risk, diversity, identification of ticks and ongoing research on control and vaccine developments.

For more details, please view the [announcement flyer](#)
To register, visit

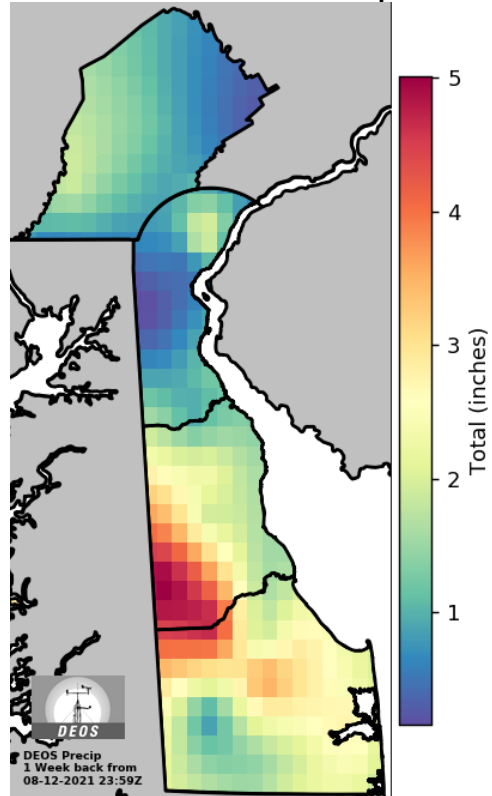
<https://tickacademy.brownpapertickets.com/>.

Weather Summary

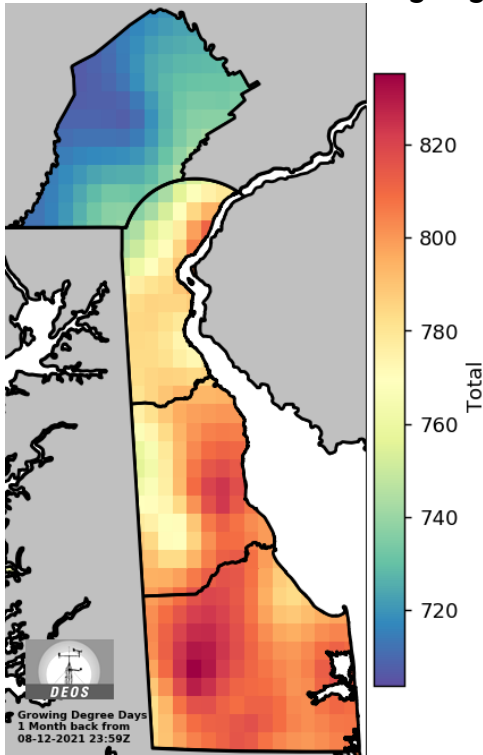
1 Week Accumulated Growing Degree Days



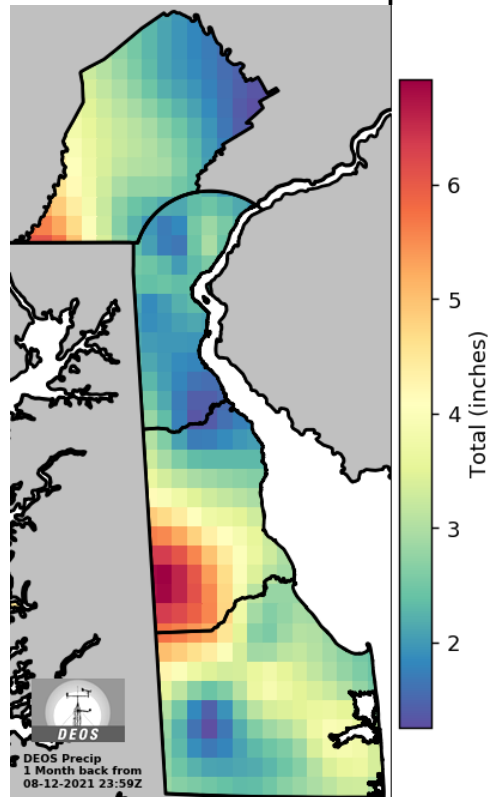
1 Week Accumulated Precipitation



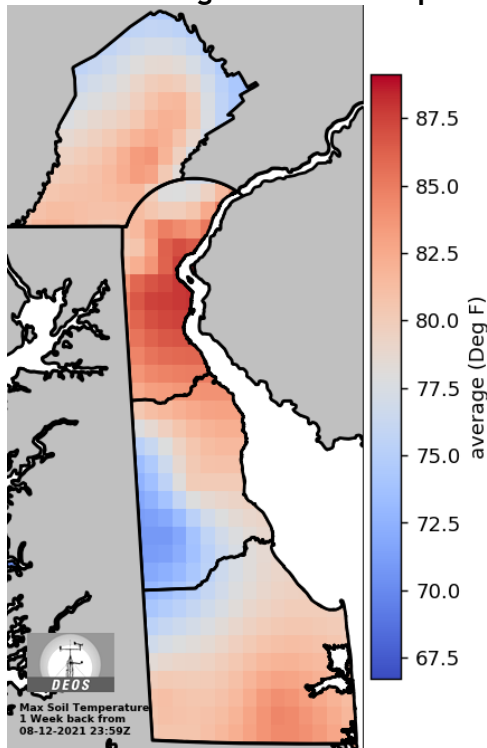
1 Month Accumulated Growing Degree Days



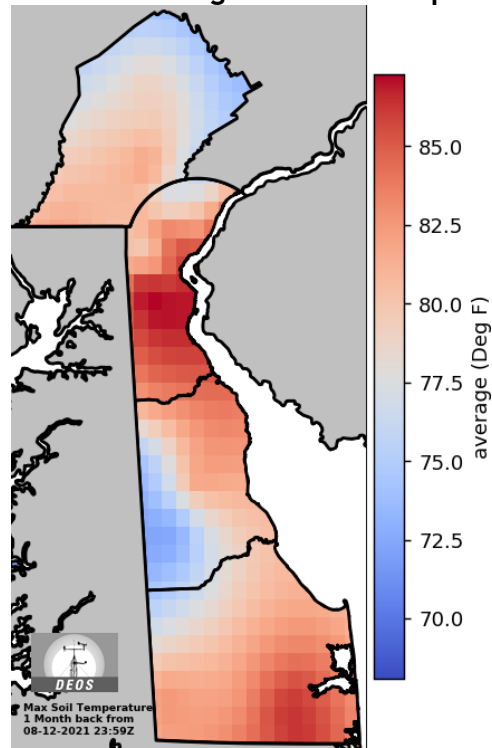
1 Month Accumulated Precipitation



1 Week Average Max Soil Temperature



1 Month Average Max Soil Temperature



These weather maps are generated from DEOS weather station data and are part of a new Ag Weather website that is under development. Your feedback is welcome!
Thanks!! Emmalea (emmalea@udel.edu)

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

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