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
Continue scouting whorl stage corn for fall armyworm. New Jersey is not reporting new infestations, however this is typically the time we start seeing them here.

For corn earworm, with the high heat this week, it is advisable to tighten treatment intervals by a day, especially when following a pyrethroid or pyrethroid/Lannate application. Moth counts are gradually increasing, in some areas it may be best to tighten to a 2 to 3-day spray schedule while others could still be around a 3 to 4-day spray schedule. Many thanks to Dick Monaco and Morgan Marzec for checking traps. Thursday moth captures are as follows:

Trap Location	BLT - CEW	Pheromone CEW
	3 nights total catch	
Dover	1	21
Harrington	1	64
Milford	2	36
Rising Sun	1	74
Wyoming	1	26
Bridgeville	1	15
Concord	2	19
Georgetown	0	33
Greenwood	1	18
Laurel	2	8
Seaford	1	0
Lewes	---	5 (2 nights)

Cucurbits
Striped cucumber beetles continue to emerge from the soil. New adults have a white and black stripe appearance. In trials, we have had good efficacy from Assail, Harvanta, and Carbaryl. Carbaryl can flare mites. Cyantraniliprole, the active ingredient in Exirel and Minecto Pro, also has cucumber beetle activity, and Exirel is labeled for beetles. Pyrethroid efficacy in trails at Salisbury last year was quite disappointing.

When scouting for striped cucumber beetle at this time, check melon rinds for signs of beetle or worm damage, and look for feeding injury on blossoms.

Scout for mites and treat accordingly. Mite populations in hot dry weather can increase 10x per week, and if melons are under stress from harvesting and from carrying a full fruit load, they become much more susceptible to mites.

Squash bugs are increasing. If nymphs are not yet present, wait for egg masses to begin hatching before treating. Pyrethroids, Assail, and Sivanto should provide good control. Use higher water rates and try to get good coverage into the canopy. Squash bugs hide during the day near plant bases and underneath residue. One note, Besiege at its highest label rate is equivalent to a Warrior application. It might be useful if squash vine borer is still active in the planting, otherwise, the chlorantraniliprole component is not effective on squash bugs.

Tomato
Reports have come in this week of stink bug damage to tomato. Stink bugs are very difficult to scout for in the crop, and stink bugs are like little tanks. Pyrethroids, Lannate, and foliar

neonics imidacloprid, thiamethoxam and dinotefuran are labeled. Please note that the neonics are all highly bee toxic. I also did not include acetamiprid, as it is not as effective on stink bugs. Use high water rates, 50-100 gallons, and high pressure. Dr. Jerry Brust wrote an excellent article on stink bugs in tomatoes in last year's edition of the WCU (ironically at the exact same time of the year: https://sites.udel.edu/weeklycropupdate/?p=18972. Please note that even once controlled, stink bug damage will appear for a while as fruit with feeding injury matures.

Cole Crops
Harlequin bug populations are increasing rapidly. With hot drier weather, diamondback moths may become more abundant.

Expect Heat Damage to Vegetable and Fruit Crops

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

The current heat wave is causing losses in vegetables and fruits. The following are some effects of high temperatures on vegetable and fruit crops.

The plant temperature at which tissue dies is around 115°F. Normally, plant temperature is just above air temperature. However, plant temperature can rise to a critical level under certain conditions. Plants have 3 major ways in which they dissipate excess heat: 1) long-wave radiation, 2) heat convection into the air and 3) transpiration.

A critical factor is transpiration. If transpiration is interrupted by stomatal closure due to water stress, inadequate water uptake, injury, vascular system plugging or other factors, a major cooling mechanism is lost. Without transpiration, the only way that plants can lose heat is by heat radiation back into the air or wind cooling. Under high temperatures, radiated heat builds up in the atmosphere around leaves, limiting further heat dissipation.

Dry soil conditions start a process that can also lead to excess heating in plants. In dry soils, roots produce Abscisic Acid (ABA). This is transported to leaves and signals to stomate guard cells to close. As stomates close, transpiration is reduced. Without water available for transpiration, plants cannot dissipate much of the heat in their tissues. This will cause internal leaf temperatures to rise.

Vegetables can dissipate a large amount of heat if they are functioning normally. However, in extreme temperatures (high 90s or 100s) there is a large increase the water vapor pressure deficient (dryness of the air). Rapid water loss from the plant in these conditions causes leaf stomates to close, again limiting cooling, and spiking leaf temperatures, potentially to critical levels causing damage or tissue death.

Very hot, dry winds are a major factor in heat buildup in plants. Such conditions cause rapid water loss because leaves will be losing water more quickly than roots can take up water, leading to heat injury. Therefore, heat damage is most prevalent in hot, sunny, windy days from 11 a.m. to 4 p.m. when transpiration has been reduced. As the plants close stomates to reduce water loss, leaf temperatures will rise even more. In addition, wind can decrease leaf boundary layer resistance to water movement and cause quick dehydration. Wind can also carry large amounts of advected heat.

Photosynthesis rapidly decreases above 94°F, so high temperatures will limit yields in many vegetables and fruits. While daytime temperatures can cause major heat related problems in plants, high night temperatures can have great effects on vegetables, especially fruiting vegetables. Hot night temperatures (nights above 75) will lead to greater cell respiration. This limits the amount of sugars and other storage products that can go into fruits and developing seeds.

High temperatures also can cause increased developmental disorders in fruiting vegetables. A good example is with pollen production in beans. As night temperatures increase, pollen production decreases leading to reduced fruit set, reduced seed set, smaller pods, and split sets. Most fruiting vegetables will abort flowers and fruits under high temperatures.

Heat injury in plants includes scalding and scorching of leaves and stems, sunburn on fruits

and stems, leaf drop, rapid leaf death, reduction in growth, and lower yields. Wilting is the major sign of water loss which can lead to heat damage. Plants often will drop leaves or, in severe cases, will "dry in place" where death is so rapid, abscission layers have not had time to form. See https://sites.udel.edu/weeklycropupdate/?p=13716 for more information on controlling sunburn.

On black plastic mulch, surface temperatures can exceed 150°F. This heat can be radiated and reflected onto vegetables causing tremendous heat loading. This is particularly a problem in young plants that have limited shading of the plastic. This can cause heat lesions just above the plastic. Heat lesions are usually first seen on the south or south-west side of stems. High bed temperatures under plastic mulch can also lead to reduced root function limiting nutrient uptake. This can lead to increased fruit disorders such as white tissue, yellow shoulders, and blotchy ripening in tomato fruits.

High heat and associated water uptake issues will cause heat stress problems. As heat stress becomes more severe a series of event occurs in plants starting with a decrease in photosynthesis and increase in respiration. As stress increases, photosynthesis shuts down due to the closure of stomates which slows or stops CO_2 capture and increases photorespiration. This will cause growth inhibition. There will be a major slow-down in transpiration leading to reduced plant cooling and internal temperature increase. At the cellular level, as stress becomes more severe there will be membrane integrity loss, cell membrane leakage and protein breakdown. Toxins generated through cell membrane releases will cause damage to cellular processes. Finally, if stress is severe enough there can be plant starvation through rapid use of food reserves, inefficient food use, and inability to call on reserves when and where needed.

Another negative side effect of reduced plant photosynthate production and lower plant food reserves during heat stress is a reduction in the production of defensive chemicals in the plant leading to increased disease and insect vulnerability.

The major method to reduce heat stress is by meeting evapotranspiration demand with irrigation. Use of overhead watering, sprinkling, and misting can reduce of tissue temperature and lessen water vapor pressure deficit. Certain mulches can also help greatly. You can increase reflection and dissipation of radiative heat using reflective mulches or use low density, organic mulches such as straw to reduce surface radiation and conserve moisture. In very hot areas of the world, shade cloth is used for partial shading to total incoming radiation and heat. Research at UD has shown that use of shade cloth can have significant benefits in heat sensitive crops if applied at the right time. Current research is underway investigating timing of shade cloth application. See https://sites.udel.edu/weeklycropupdate/?p=20476 and https://sites.udel.edu/weeklycropupdate/?p=19864 for more information on use of shade cloth.

Leaf Scorch in Sweet Corn

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

Leaf scorch has been found in some sweet corn crops recently. Leaf scorch 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 scorch, some of the leaf scorch can progress deeper into the canopy showing up on some of the corn husks, which will affect marketability. Leaf scorch 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 scorch has a genetic component as certain varieties of sweet corn are more susceptible. Overhead irrigation during high temperature hours can reduce this disorder.

Leaf scorch in sweet corn affecting the upper canopy.

Leaf scorch affecting sweet corn husks.

High Temps and Stink Bugs Threaten Pole Limas

– *Emmalea Ernest, Scientist - Vegetable & Fruit Crops*; emmalea@udel.edu and *David Owens, Extension Entomologist*, owensd@udel.edu

Pole lima beans are a very profitable crop for market gardeners and produce growers across Delaware and also have an enthusiastic following among home gardeners. Unfortunately growing them has been somewhat frustrating in recent years because of their sensitivity to heat stress and attractiveness to stink bugs.

Heat Stress

Large seeded lima beans like Dr. Martin, King of the Garden, Big Mama and other strains maintained by gardeners are more heat sensitive than small seed baby limas. High night temperatures have a greater impact than high daytime temperatures. When night temperatures are high, the anthers in developing flower buds do not develop properly. When the flower opens the damaged anthers do not release pollen (Fig. 1) and/or the pollen that is released is not viable. Without viable pollen, seeds do not set, and the flowers or small pods will drop from the plant.

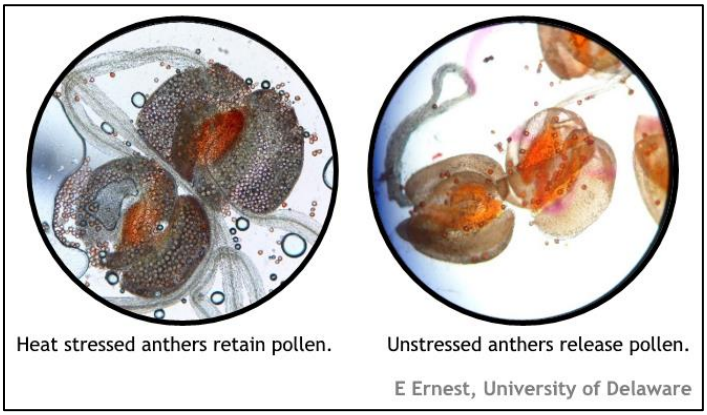


Figure 1. These anthers are from lima bean plants grown under controlled night temperature conditions. Anthers from plants grown in high night temperature conditions do not open when flowers open and pollen is not released. In plants grown under cool night temperature conditions, anthers open and release pollen.

The critical threshold temperature for pole lima varieties had not been established but it is probably in the 68-70˚F range. To date, this year (2022) has had the lowest June and July night temperatures since 2014 (Table 1). At Georgetown, there were 15 nights above 68˚F and 8 nights above 70˚F from June 1 to July 20 compared to an average of 21 nights above 68 ˚F and 14 nights above 70 ˚F from 2005-2022. This means that 2022 has had some of the best conditions for early season pod set of any year since 2014. However, this week's hot weather will put an end to the favorable conditions. Often the majority of pole bean yield is from pods set in August and it is nighttime temperatures in that month that determine September and October harvests.

Table 1. Number of days with daily lows above 68 ˚F and 70˚F from June 1 to July 20 at the Carvel Research and Education Center, Georgetown, Delaware from 2005 to 2022.

	Number of Daily Lows Above Threshold Jun 1-Jul 20	
Year	**>68 ˚F**	**>70 ˚F**
2022	15	8
2021	25	16
2020	25	18
2019	26	17
2018	23	17
2017	28	21
2016	18	13
2015	25	18
2014	13	8
2013	29	23
2012	21	15
2011	19	12
2010	28	20
2009	4	2
2008	17	9
2007	15	12
2006	22	14
2005	25	17
Average	***21***	***14***

There are variety differences in heat tolerance. The most heat tolerant large-seeded lima available to growers currently is Christmas Lima. I (Emmalea) am breeding and testing some pole lima varieties that are more heat tolerant as a part of the UD lima breeding program. These lines have heat tolerance derived from large seeded lima varieties from Africa, the southern U.S.

Stink Bugs

Although temperatures have been favorable for pod set in the last six weeks, we are also seeing unusually high numbers of stink bugs this year and they are a major threat to developing pole lima pods. Three of our common stink bug species are pests of pole lima bean: green stink bug, brown stink bug, and brown marmorated stink bug (Fig. 2-7). Stink bugs can reduce lima bean yields significantly.

Figure 2. Stink bug eggs on a pole lima pod.

Figure 3. Recently hatched stink bug nymphs on a pole lima pod.

Figure 4. Green stink bug nymph

Figure 5. Brown marmorated stink bug nymph

Figure 6. Adult green stink bug.

Figure 7. Adult brown stink bug.

These insects feed by piercing developing pods with their needle-like stylets, sucking sap out of the pods or young seeds. This causes misshapen seeds in more developed pods and dropped pods when seeds inside young pods are killed. Prior to pod set, stink bugs should not cause any yield loss, but if they are present in a planting prior to the podding stages, they will be there for when the plants start to produce small pods. Hot weather will also cause poor pod set, but if conditions are cool and pods and flowers are dropping from plants, stinkbugs are frequently the cause of the problem. Also, larger pods that wilt and drop from the plant are usually the result of stink bug feeding, not heat stress. Scouting for stinkbugs in a mass of thick pole be

foliage can be difficult. Instead, look for the damage they cause to confirm they are a problem (Fig. 8-9).

Figure 8. Stink bug feeding damage on baby lima pods (left) and undamaged pods at a similar developmental stage. Stink bug feeding can kill developing seed and cause fluffy white growth inside of pods at the feeding site.

Figure 9. Pole lima bean pod with stink bug feeding damage indicated by arrows.

Insecticide sprays are used for control. Commercial applicators may consult the Mid-Atlantic Commercial Vegetable Recommendations for insecticide options (http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/). Home gardeners and small scale growers can look for products containing bifenthrin which are labeled for use on lima beans. On most home garden type products, the active ingredient is listed on the bottom left or bottom right of the label panel. Follow the product directions for application and days until harvest. Such products are available in some garden centers. If treating for stink bugs, scout the plants carefully for spider mites. Insecticides targeting stink bugs reduce predator activities allowing mites to quickly increase in population growth.

Finally, reduce your impact on pollinators. Spaying at dusk is the best way to reduce pollinator exposure.

Bacterial Canker of Tomato

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

A disease of tomato that we usually only see occasionally has been observed more frequently this year in several fields in Maryland. The disease is bacterial canker caused by the bacteria *Clavibacter michiganensis*. A common symptom of the disease is leaf tips and margins that are yellow surrounded by dark brown tissue (Fig. 1), although at times there can no yellow border, which is typically due to the cultivar or the environmental conditions. Veins on the leaves can become dark and sunken. Leaves can wilt starting at their tips to their branches after which they die and fall from the plant. Systemic infections of bacterial canker usually occur on more mature plants that are growing poorly with the oldest leaves curling, turning yellow and wilting. Fruit symptoms usually manifest themselves as small, round, raised white lesions with yellow margins especially near the calyx.

Figure 1. Bacterial canker typical secondary symptoms on leaves

Bacterial canker of tomatoes is often introduced into a field via infected seed or transplants and can be spread by splashing water or plant contact (pruning and trellising). The disease can survive in soil debris for up to three years and can also survive on stakes (especially if wooden) or tools. Several nightshade species act as hosts for the disease. There are no spray treatments that are effective for its control.

Expect Poor Fruit Set in Tomatoes

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

The heat wave we have had and will continue having into next week will have repercussions over the next month as the flowers of several crops including cucurbits, peppers and especially tomato will not pollinate or fertilize properly to develop into fruit. Daytime highs of ≥92° F and nighttime lows only getting down to 71° F in much of the mid-Atlantic will cause blossom drop and fruit abortion in tomatoes. Normally tomato pollination is achieved by the action of the wind. Pollen is released from the tomato flower and falls downward onto the stigma. Without pollination flowers die and drop. In tomatoes, blossom drop is usually preceded by the yellowing of the pedicel (Fig. 1). Tomato flowers must be pollinated within 50 hours of formation or they will die. This is about the time it takes for the pollen to germinate and move up the style to fertilize the ovary.

Tomato plants can tolerate extreme temperatures for short periods, but several days or nights with too high of temperatures will cause the plant to abort flowers and fruit (Fig. 2). At these high temperatures the pollen can become sticky and nonviable, preventing pollination from occurring and causing the blossom to dry and drop. Relative humidity also plays a role in pollination with high levels (>80% RH) during pollen shed causing the pollen not to be released properly resulting in poor or incomplete pollination.

Most tomato cultivars can make up for this set back of low fruit production with increased flower formation once it cools a bit. It would help to have some cultivars that are better able to take the high temperatures and humidity without as much flower/fruit abortion. Variety trials are being conducted by Maryland County Educators to see what cultivars of tomato do well in high temperatures and humidity.

Figure 1. Pedicels of tomato (arrows) turning yellow prior to aborting

Figure 2. All of the flowers on these 2 fruit clusters have aborted because of high temperature/humidity

Fruit Crops

Fruit Crop Insect Scouting – *David Owens, Extension Entomologist,* owensd@udel.edu

A sample came in the Diagnostic Clinic earlier this week of fruit with San Jose Scale on it. Orchards with San Jose Scale on fruit should be treated in the winter and a follow up insecticide in the spring targeting first crawlers. There is a good fact sheet from Virginia Tech: https://www.virginiafruit.ento.vt.edu/SJS.html and Penn State (with chemical management links for home garden and commercial growers: https://extension.psu.edu/tree-fruit-insect-pest-san-jose-scale.

Monitor apples for stink bugs. Apples are most attractive between 4 and 8 weeks prior to harvest. There are pheromone traps available for brown marmorated stink bug. Unfortunately, the best stink bug materials are pyrethroids which can disrupt biological controls for other pests and can flare up mites. Alternate row middle sprays can help conserve beneficials.

Tissue Testing for Fruit Nutrient Management – *Gordon Johnson, Extension Vegetable & Fruit Specialist;* gcjohn@udel.edu

Late July or early August is the time to collect leaf samples for nutrient analysis in tree fruits, grapes, and blueberries. As shoots grow and leaves age, nutrient concentrations change. Mid-summer is the standard time to sample because levels of most nutrients are relatively stable, so results can be best interpreted by comparing them to known values.

Leaf analyses is be used to diagnose nutritional problems and to identify developing problems before growth or yield is affected. Sample young plantings every one to two years and established plantings every two to three years. The whole farm can be sampled in the same years, or portions sampled on a rotating basis.

Collect a minimum of 50 leaves from 10-20 different plants throughout the field block. Select healthy leaves from the middle of this year's shoots. If the leaves are dusty, rinse briefly in tap water and lay leaves out on a tabletop until they are dry to the touch. For vineyards, collect between 80 to 100 petioles or 30 to 50 leaf blades per vineyard block. Avoid collecting samples from leaves that have been damaged by insects or diseases or from abnormally growing vines or shoots.

For all fruit tissue samples place each sample in a clean paper bag labeled with location, block, cultivar, growth stage, and date. Send to a respected agricultural testing laboratory for mineral nutrient analysis.

These blueberry leaves are fully expanded, from this year's new growth - just right for tissue sampling. A complete sample requires at least 50 leaves like these, from 10-20 plants.

Agronomic Crops

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

Corn

Continue scouting for stink bug in late corn and for western corn rootworm in fields that were in corn last year (and even more so for fields that have been in continuous corn for multiple years) AND will be in corn next year. Thresholds for soil insecticide or a rootworm Bt trait are 1 WCR per plant. Targeting adults is not recommended. Stink bug thresholds increase after VT stage.

Soybean
Scout for mites, defoliators, and stink bugs. Mite thresholds are based in part on plants being drought stressed, stippling on 20-30% of leaf area and mite populations actively growing. Fungal pathogens are present in the area, so check mites to make sure they are in fact alive. Dead mites will have a brown, fuzzy or shrunken appearance. The best and most consistent miticides have been Agri-mek and Zeal. Dimethoate has some decent mite activity, equivalent to Lorsban. It can reduce mite populations enough to reduce their impact on yield but it will not eliminate them. Dimethaote is also excellent on grasshoppers. Stink bugs are also very active this season. I recently recorded a pest patrol update about them. Pest patrol is a free text service that notifies subscribers when a regional update has been recorded. Thresholds are 5 bugs per 15 sweeps, but I suspect it should be a bit lower in Plenish soybean. Stink bugs will not cause any yield impact until R4 – full pod stage, and the greatest yield impact at R5, beginning seed stage. However, stink bugs present at R2 or R3 have very little reason to leave the crop, except through natural mortality.

My IPM App
A handy smartphone app was developed by Clemson and the Southeatstern IPM Center that can be downloaded and accessed offline. There are downloads available for sorghum, corn, and soybean. There is information on chemical control, monitoring, scouting, thresholds, and identification. Check it out.

Soybean Disease Updates – *Alyssa Koehler, Extension Field Crops Pathologist*; akoehler@udel.edu

Full season soybeans across the area are approaching or at R3. Overall, soybean disease pressure has been low across the region. I have been seeing a bit of low canopy Septoria Brown Spot. Leaf symptoms begin as small brown spots that can have a yellow halo around them, as spots coalesce the leaf may turn yellow (Figure 1). This disease usually stays to the bottom of the plant, limiting yield impact. Fungicide applications in soybean are most economical when disease is present and fungicides are applied during R1-R6 growth stages, with R3 being the most common timing. If you have disease present, and are considering a fungicide application, it is important to scout fields and monitor the weather. Most soybean diseases are favored by humid, wet conditions. If weather patterns continue to be hot and dry, disease pressure will likely remain low. However, we do often see wet falls, so continue to monitor rainfall and disease pressure through R6. The 2022 National Fungicide Efficacy Recommendations for Foliar Diseases of Soybean can be found at https://cropprotectionnetwork.s3.amazonaws.com/CPN1019_FungicideEfficacyControlSoybean_final2.pdf.

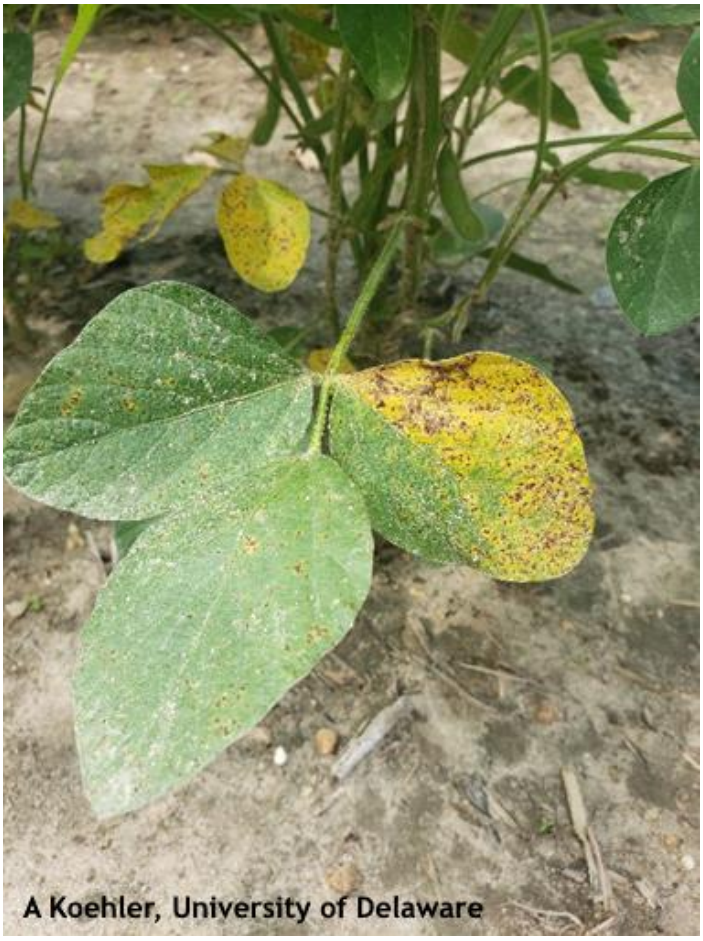
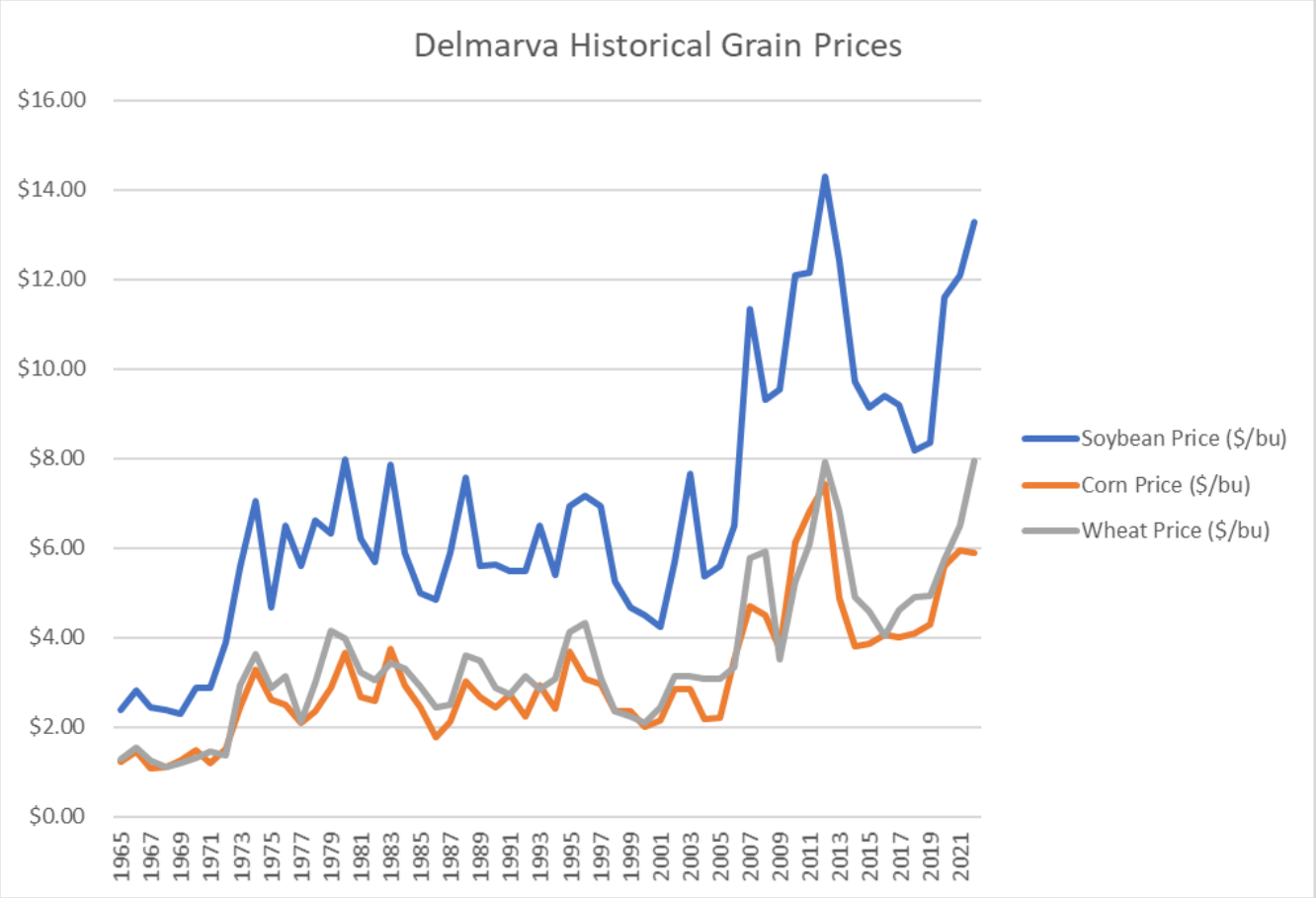


Figure 1. Low canopy Septoria brown spot

Election Years' Impact on Delmarva Grain Prices

– *Nate Bruce, Farm Business Management Specialist,* nsbruce@udel.edu

Mid-term elections are this year and Congress has the potential to change hands with all 435 seats in the House of Representatives and 35 seats in the Senate being contested. Primary elections just recently occurred in Maryland on July 19th, and Delaware's primary elections are slated for September 13th. When change occurs in Congress, changes may also occur when it comes to creating agricultural policies such as setting ethanol usage demand or enacting policies that impact export and import markets. It is well known that agricultural policies have an impact on grain prices. Below is a graph that shows historical grain prices on the Delmarva peninsula from 1965 to the current day.



Some long run price changes seen in the historical prices are direct results of agricultural policy changes. Increased export and import demand can be attributed to the increase in grain prices during the early 1970s. Growth in major export markets such as China and increased ethanol usage can be attributed to the grain price increase in 2006. But this leads to the question, how do grain prices change in the short run from year to year during election years and non-election years when politicians are enacting policy? Looking into this question, the annual difference in grain prices going back to 1965 was calculated and averaged for election years (all general election years including presidential elections and mid-terms) and non-election years. The results are interesting and listed below in the following chart.

Year Over Year Average Difference in Grain Prices

	Soybean	Corn	Wheat
Election Year	$0.10	$0.04	$0.02
Non-Election Year	$0.37	$0.14	$0.22

The results show that the annual difference in grain prices during election years are not as significantly high as compared to non-election years. It should be noted that the annual difference in grain prices is not always a positive value. More than often, the annual difference is positive, and the results show this. The annual year over year difference in average grain prices during election years is $0.10 for soybeans, $0.04 for corn, and $0.02 for wheat. In non-election years, the annual year over year difference in average grain prices is $0.37 for soybean, $0.14 for corn, and $0.22 for wheat. This significant annual difference can be attributed to uncertainty surrounding what agricultural policies will be in place due to elections possibly changing which policy makers are active. In non-election years, policies are more established, and there is greater certainty into factors that impact grain prices. There are many factors that influence grain prices and policy changes are significant both in the long run and short run.

General

Vaccination Schedule Information for Children and Adults - *Hannah Sherman, Community Health Intern, Sarah Goldring, Extension Agent,* sbercaw@udel.edu, *Gina Crist, Extension Community Health Specialist,* gcrist@udel.edu

Adults need vaccinations based on their age and health conditions. Some health conditions, including diabetes, heart disease, and lung disease, increase a person's risk of severe illness from vaccine-preventable infections. Also, ensuring every child receives vaccines for preventable diseases is essential. If a group of babies and young children fall behind on their vaccines, these diseases will have an opportunity to reemerge, causing outbreaks – and potential deaths – in our communities once again. Check the CDC websites linked below for information about adult and child immunization schedules to make sure you and your family are up to date.

Adult:
https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html

Child:
https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html

Information about the COVID Vaccine

Why get the COVID-19 Vaccine? COVID-19 vaccines available in the United States are effective at protecting people from getting seriously ill, being hospitalized, and even dying. As with vaccines for other diseases, you are protected best when you stay up to date. CDC recommends that everyone ages 6 months and older get their primary series of COVID-19 vaccine, and everyone ages 5 years and older also receive a booster dose, if eligible.

Link to source for more information:
https://www.cdc.gov/vaccines/index.html

Announcements

2022 Beginning Farmer Training Program

The Delaware Beginning Farmer Program is for new and beginning 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 learn and grow 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, 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 Fischer Greenhouse on the College of Agriculture and Natural Resources' campus in Newark, unless otherwise noted.

Wednesday, September 14, 6-8 pm, Course Orientation, Soil Health

Wednesday, September 28, 6-8 pm, Variety Selection

Saturday, October 1, 9-11 am, Hands- On Planting, Setting up an Indoor Seed Starter Unit

Wednesday, October 12, 6-8 pm, Small Farm Business Planning

Saturday, October 15, 9-11 am, Field Trip to Against the Grain Farm at William Penn Farm

Wednesday, October 26, 6-8 pm, Weed Identification and Management, Small Scale Irrigation

Wednesday, November 2, 6-8 pm, Integrated Pest Management: Insect and Disease Pests

Saturday, November 12, 9-11 am, Field Trip to Worrilow Hall Labs, UD Fresh to You

Wednesday, November 16, 6-8 pm, Delaware Beginning Farmer Resource Panel with DDA, NRCS, Farm Bureau and others

Register online at: https://www.pcsreg.com/2022-beginning-farmer-training-program

National AgrAbility Training Webinars

Each webinar begins at 2:00 p.m. EDT on the given Thursday. For session descriptions and more information, visit ***http://www.agrability.org/ntw-encore/***.

August 4: "Farm Rescue - Helping Farm Families in Crisis"

August 18: "Vision Solutions for Farmers"

September 1: "Working with Capstone Students to Augment AgrAbility Services"

September 15: "Managing Stress on the Farm"

September 29: "Making Lemonade When Outreach Events Hand You LEMONS!"

October 13: "Build Resilience into Your Farm: Let Nature do the Heavy Lifting"

October 27: "Low Stress Marketing for Farmers"

A question & answer period is scheduled for each presentation.

To participate in any of these free webinars, ***click here to access the online registration form***. Please pass on this invitation to others you believe may be interested. Contact AgrAbility at 800-825-4264, visit ***www.agrability.org/ntw-encore***, or email ***agrability@agrability.org*** if you have questions.

DNLA Summer Turf & Nursery Expo

Wednesday, August 3, 2022
UD Botanic Gardens, Newark, DE

Discussions/demonstrations at DNLA's Annual Summer Event Include:

· Planting Alternatives to Invasives

· UDBG Trial Garden - Color Galore

· Turfgrass Trials & BMP's for Turfgrass Establishment

· Equipment & New Product Infomercials

· How Not to Kill Your Transplanted Tree & BMPs For Disease & Insect Issues

· Pest/Disease Walk

· Turfgrass Weed & CNP Plant ID Challenge

Registration includes a BBQ lunch, tradeshow and seminars

5 Delaware pesticide applicator recertification credits in Category 03 will be awarded. Credits for PA, MD and ISA will also be available. 1 DE Nutrient Management CEU will also be awarded.

Event will be outdoors and held rain or shine. A mask is required when entering UD facilities.

Event details available here.

Register online at:
https://2022dnlasummerexpo.eventbrite.com/

Field Tour of Carvel Crops Research

Wednesday, August 10, 2022 3:00-6:00 p.m.
University of Delaware
Carvel Research & Education Center
16483 County Seat Hwy, Georgetown, DE 19947

Please mark your calendars and save the date to join us for the 2022 Crops Research Tour at the University of Delaware Carvel Research and Education Center. This event will include wagon tours of agronomic and vegetable research plots.

More details will follow in the coming weeks.

Nematode Field Day

Thursday, August 18, 2022 3:00-6:00 p.m.
University of Delaware
Carvel Research & Education Center
16483 County Seat Hwy, Georgetown, DE

Covered topics will include soybean cyst nematode seed treatments and resistance genes, updates on lima bean resistance breeding for root knot nematodes, RKN in cucurbits, summary of nematode survey results conducted in recent years, and management strategies. 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.

Pesticide credits will be available for both Delaware and Maryland.

Registration information can be found at udel.edu/009690. A boxed dinner will be included for those registered by August 12.

Please contact Alyssa Koehler akoehler@udel.edu with any questions.

Soil Health Field Day

Tuesday, August 16, 2022 9:00 a.m.-1:00 p.m.
Baxter Farms, 23073 Zoar Rd, Georgetown, DE

The Delaware Soil Health Partnership will hold an in-person soil health field day on Tuesday, Aug. 16, at 9 a.m.

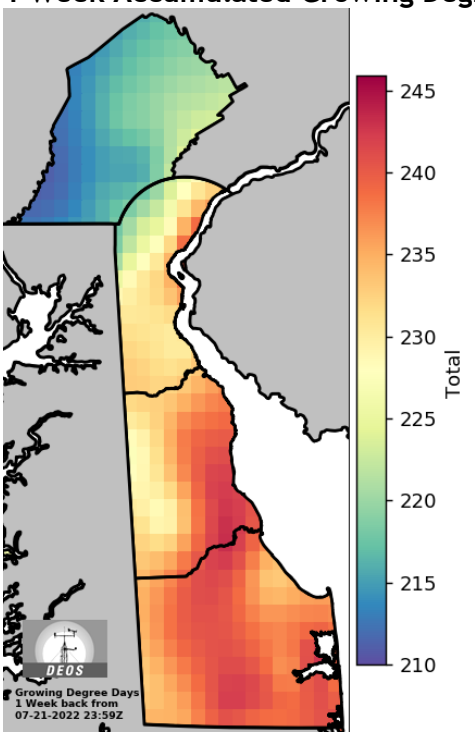
Rick Clark, a fifth-generation farmer from Williamsport, Ind., will discuss farming green and his experience with organic no-till on nearly 7,000 acres. University of Delaware Extension agents will provide the latest research updates while Jay Baxter, owner of Baxter Farms, will discuss experiences in the field.

The field day will be held at Baxter Farms, 23073 Zoar Rd, Georgetown, DE 19947 in Georgetown, Del. Lunch will be provided. Nutrient management credits are pending, and preregistration is required.

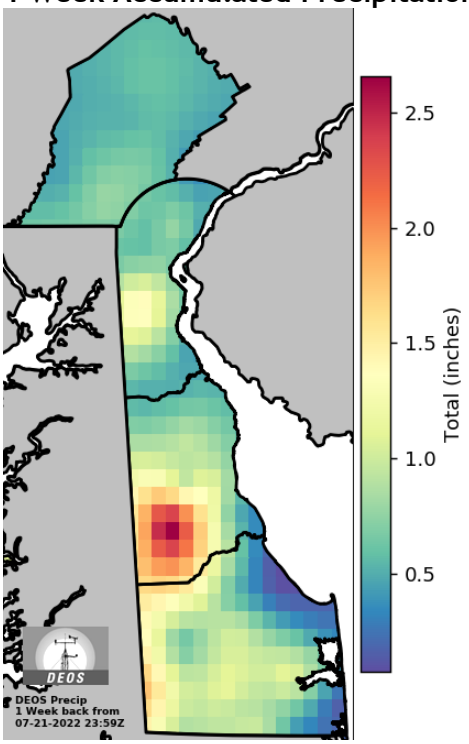
For more information or to register go to https://www.sussexconservation.org/events/field-day.html.

Weather Summary

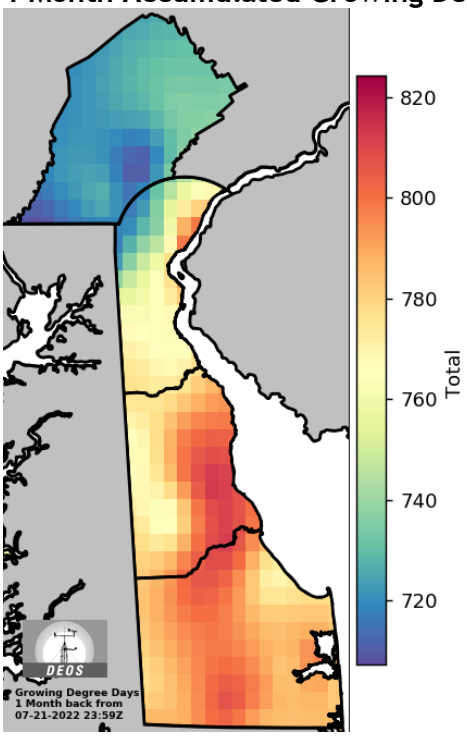
1 Week Accumulated Growing Degree Days



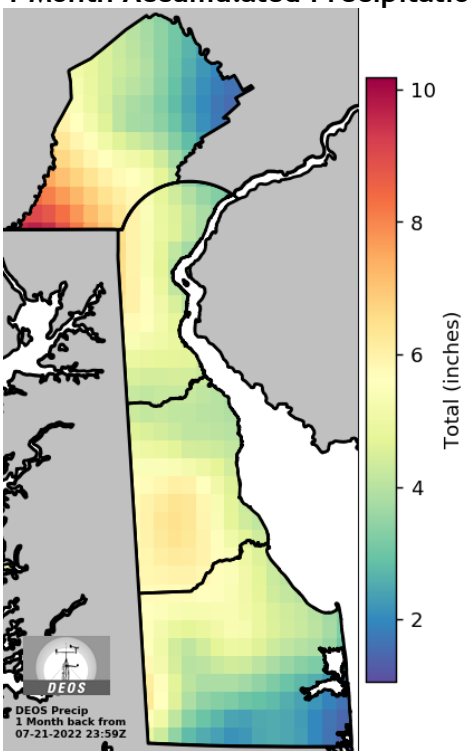
1 Week Accumulated Precipitation



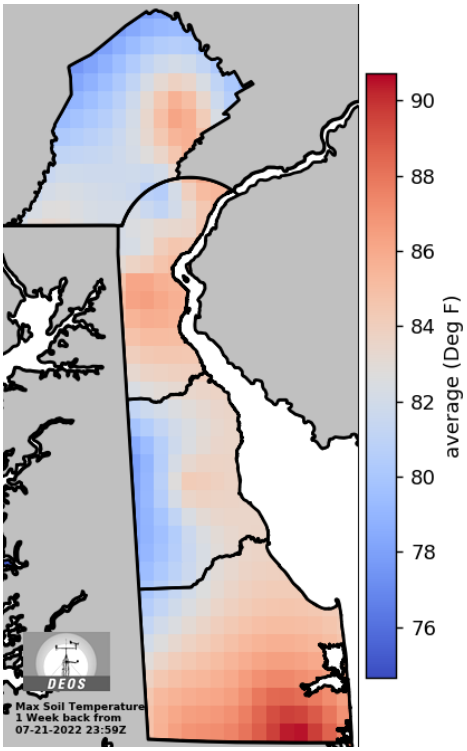
1 Month Accumulated Growing Degree Days

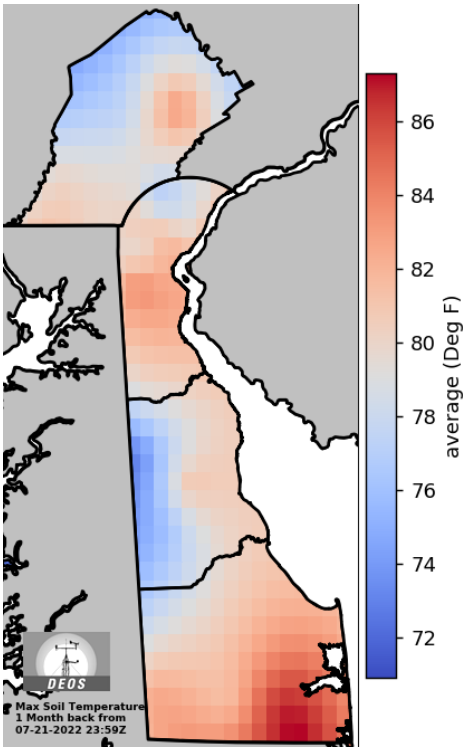


1 Month Accumulated Precipitation



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

Reference to commercial products or trade names does not imply endorsement by University of Delaware Cooperative Extension or bias against those not mentioned.