

Volume 28, Issue 5

## Vegetable Crops

<u>Vegetable Crop Insect Scouting</u> - David Owens, Extension Entomologist,

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#### Asparagus

A couple of asparagus beetle eggs were observed on an emerging fern late last week. These were the only eggs found in a large field of emerging spears; no adults were found but they must have been hiding nearby. Eggs are small, cylindrical and dark colored that stick into the spear at a 90 degree angle. There are two species that feed on asparagus, the common and the spotted. The spotted is less common and the larvae feed on berries instead of foliage. The common is, well, more common. It has large white square shaped spots bordered by dark metallic blue bands. It can take a week for eggs to hatch. Feeding on spears results in scarring, browning, and hooked tips. Examine 10 plants in 5-10 different spots in a field, best on a warm, sunny afternoon when beetles are going to be most active. A treatment may be justified if 10% of spears are infested with beetles or 1-2% have eggs. Labeled products for spears include malathion, permethrin, and carbaryl.

April 17, 2020

<u>Transplanting Warm Season Crops in April</u> -Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Warm season vegetables such as tomatoes, cucumbers, squash, and watermelons require special attention when transplanted in April.

It is important to plant in your highest elevation fields with the lightest soils first and avoid low areas and frost pockets.

Black plastic mulch is most commonly used for early vegetables because of its soil heating property. It is important to lay the plastic so that it is tight against the soil on a firm bed. This allows for effective heat transfer that will promote good root growth. Green/brown IRT (InfraRed Transmitting) plastic suppresses weeds nearly as well as black mulch and lets infrared light through to warm the soil beneath more quickly and to a higher temperature. It is best used with very early planted warm season vegetables.

Start planting only when a warming trend is in the forecast. This is when daytime temperatures are expected to increase during the week and nighttime temperatures do not drop below 45°F. Bed temperatures should be above 60°F during the day. Do not plant on a cooling trend and avoid planting when cold, clear nights and high winds are in the forecast.

Also avoid planting if extended cold, cloudy weather is in the forecast. It is critical to have warm soil conditions after transplanting to allow roots to grow out into the bed quickly. In cold, cloudy conditions, plants shut down physiologically, little root growth occurs, and the existing roots on the transplant do not function well, thus increasing the risk for transplant stunting or transplant losses.

Target fields with well advanced (the tallest) rye windbreaks between each row for early plantings. Windbreaks reduce wind injury and desiccation of transplants and reduces the loss of heat from black plastic mulched beds, thus allowing more heat to be accumulated during the day (to be released at night). Row covers may be required in addition to windbreaks in the earliest plantings.

In areas without windbreaks, consider using floating row covers for cold sensitive crops for the first 2-3 weeks. Use wire hoops supports over the top of plants to avoid mechanical injury. Clear perforated plastic row covers also can be used to increase daytime temperatures and heat the plastic beds. However, clear row covers do not have the same insulating effect of floating row covers.

Make sure that transplants in trays are hardened off well before transplanting. Hardening off is most commonly done by exposing plants to outside conditions by moving the plants out of the greenhouse, in a protected area, for about a week. Wagons are ideal because they can be moved into sheds at night if temperatures drop too low or cold strong winds are expected. In greenhouses with roll-up sides, hardening off can be accomplished by increasing the day-time exposure to cross winds. Reduced watering and fertilization are also a part of hardening off the plants. During the hardening off process, the cuticle of the plant thickens. The cuticle is the outermost layer that covers leaf surfaces and is composed of wax, lipids, and hydrocarbon polymers and protects the plant from water loss and desiccation.

Warm season vegetable transplants vary in their ability to withstand sub-optimal conditions depending on how well they have been hardened off and their inherent ability to withstand stress. Tomatoes, cucumbers, and squash are better able to handle early season stresses than cantaloupes, watermelons, or peppers. When temperatures are cool, soils are wet, and there is cloudy weather, soils stay cool, even under plastic mulch. Growth is minimal in these crops. We often see problems, especially the first few days when sunny weather returns, with plants wilting. This is because root systems have not established or are not functioning well. Root growth is slowed in cold soils and low oxygen in water-soaked soils will also limit root growth. Average soil temperatures need to be 65°F or higher and average air temperatures should also be above 65°F (ideally above 70°F) for good establishment of these crops. Seed and root maggots and root diseases such as Pythium can further stress transplants and reduce stands.

Make sure transplants have well developed root systems. Transplants should pull easily from trays and have full root balls. Do not rush transplants into the field. Vine crops are very sensitive to root damage during transplanting.

In seedless watermelon systems, time production of pollenizer transplants so that they coincide well with the seedless transplants. Pollenizers are often planted after seedless because they emerge quicker. However, pollenizer root balls may not be well formed compared to the seedless transplants and they can suffer excessive losses in the field when planted in stressful conditions. The opposite can also be true if pollenizers are ready but the seedless plants do not have good root balls.

Leggy or tall plants will be a problem in stressful conditions and should not be used if at all possible. Leggy plants are more susceptible to damage in transplanting and wind damage after planting thus subjecting them to additional stress.

Transplants should be planted at the proper depth. This is particularly critical for watermelons and cantaloupes. There should be enough soil to cover the root ball of these crops but they should not be planted so deep so that the stem is covered. Deep planting in cold wet soils will result in additional stress on melons. Watermelons and cantaloupes should not be set deeper even if they are leggy. Other crops such as tomatoes and peppers can tolerate deeper planting. Extra care should be taken during transplanting during stressful periods to reduce injury to plants, particularly to root balls. Damage to roots will reduce establishment success especially in melons, cucumbers, and squash. Train planting crews so that they do minimal damage to transplants.

If conditions are not favorable for planting and plants will hold, it is best to wait until more favorable weather returns. Often there is no earliness gained by planting in the stressful period; or gains are negated by stand losses and the need to replant areas.

Provision for water at transplanting is critical for plant survival. Planting hole watering is recommended at planting. Mechanical transplanters with water tanks are ideal for this. With hand plantings, provision to irrigate overhead immediately after transplanting may be necessary. In plastic mulch systems with drip irrigation, having adequate water at planting can sometimes be difficult. Running the drip irrigation system so that the planting area is saturated often leads to leaching of fertilizer nutrients from the bed and can keep beds cold in adverse weather. Adding dilute fertilizer solutions in the transplant water is also a common practice. Follow manufacturer's recommendations and make sure the fertilizer is dissolved well if using dry soluble sources. Fertilizers are salts and excess fertilizer or fertilizer that is unevenly mixed or dissolved can cause salt injury to transplants.

In seedless watermelons, losses of plants in the field can be problematic, especially where pollenizers died. Replanted pollenizers will flower later and may delay fruit set. To complicate matters, many seedless watermelon growers have switched to co-planted pollenizers (pollenizers planted in the same cell with the seedless variety). Loss of both co-plants will require replacing both seedless and pollenizer. Loss of the seedless in the co-planted cell will require replanting next to the pollinizer with a seedless transplant. Loss of pollenizers in the coplanted cells may necessitate adding pollenizers between plants when replanting is straight pollenizer trays may are available. Another complication is that it may be difficult to tell which plant has died in co-planted cells. Fields with reduced numbers of pollenizers can have fruit set problems, reduced fruit sizes, and increased hollow heart, particularly in the crown set.



Leggy watermelon transplant with poor root ball. This plant would not survive in early plantings.

<u>Wind Protection for Vegetables</u> - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Windbreaks are a very useful tool for producing early vegetables. Most commonly, rye is used because it grows taller than other small grains and elongates in April. Using rye windbreaks requires planning because they are planted the previous fall (September-October).

Windbreaks can be planted between every vegetable bed, every 2-3 beds, or in drive row areas only. For early protection, every-bed windbreaks are recommended. Most commonly a drill is used and 2-4, 7" drill rows of rye are planted and the other drill spouts are blocked off to leave the area where the vegetable crop will grow (bed areas) unplanted. As an alternative, the field can be solid planted and areas between windbreaks can be tilled in early spring to terminate the rye in bed areas. Windbreaks can be use in bare ground systems but are most effective when combined with plasticulture

Windbreaks serve several functions:

1) Windbreaks block high winds, thus protecting transplants and seedlings from direct wind damage (whipping, tearing, shredding, and breaking stems and leaves).

2) Windbreaks reduce or eliminate "sandblasting" in sandy soils where fine sand particles are picked up by the wind. Sandblasting can severely damage young plants by shredding leaves and cutting stems.

3) Windbreaks reduce transpiration losses in young transplants thus reducing losses to wilting and desiccation.

4) Windbreaks reduce convectional heat losses from the soil, thus providing a warmer environment for early growth.

5) Windbreaks can serve as a mulch between plastic beds, reducing soil contact for vining crops such as melons, thus producing cleaner fruit and reducing the potential for soil borne diseases infecting fruits.

Rye is the most common crop used for windbreaks because of its early growth and height. Triticale (wheat/rye cross) matures 1-2 weeks later and can be used as a windbreak. Barley is also early; however, modern varieties are shorter in stature and less effective as a windbreak. Wheat is later still and not as effective as rye for early plantings.

If rye windbreaks have not been fall-planted, then early spring planted mustard crops can be used as windbreaks; however, they are less dense than rye. March planted spring oats is lower growing and much later in stem extension than rye thus limiting its use as a windbreak to late plantings.

If high winds are an issue for late spring and summer plantings or for fall crops then May-June planted sudangrass or sorghum/sudangrass crosses would be recommended as the preferred windbreak.

In no-till or strip till systems using rye cover crops or mixtures with rye, windbreaks can be left in the field by rolling some areas and leaving others unrolled as a windbreak.

Windbreak growth termination is also important. All rye (or other small grain) windbreaks should be killed using a non-selective herbicide before viable seed is produced, otherwise volunteer grain will come up in later crops. This is not a big problem for farms that only produce vegetables; however, it can be a major issue on farms that rotate with other crops (volunteer rye in a wheat field for grain is a problem).

#### **Other Wind Protection Methods**

Low tunnels with row covers (clear or spun) also are effective at protecting young plants. Covers must be well secured. Covers most often are removed once plants have significant growth.

Another method for protecting seeded vegetable from windblown sand that can cut off new seedlings is interplanting or co-planting with grass family crops such as small grains and ryegrass. These nurse crops are then killed with grass selective herbicides before they become competitive with the vegetable seedlings. (this system is not appropriate for sweet corn). No-till and strip-till plantings into cover crops can also serve this purpose.



Plastic mulch bed between every-bed-planted rye windbreak that is full height. This will provide maximum protection and heat accumulation. Photo credit G. Johnson



Low Tunnels with row covers for wind and frost protection.

# Fruit Crops

<u>Misshapen Strawberry Fruits, Cold Damage</u> <u>and Frost Injury</u> - Gordon Johnson, Extension Vegetable & Fruit Specialist; <u>gcjohn@udel.edu</u>

Strawberries with row covers removed were exposed to freezing temperatures on April 11 in some areas of the state.

Frost and freezes will commonly kill the whole strawberry flower. Cold damage that does not kill the whole flower will also cause berry deformities because some achenes have been damaged. Cold injury can also cause fruit with multiple tips.



Frost injury. Pistils in the center of blossoms turn black or brown.

Misshapen strawberries during spring often results from poor pollination. Strawberries are aggregate fruits. They have multiple ovules per receptacle where the fruit is formed. The strawberry receptacle may have up to 500 ovules per berry. You will see these as "seeds" on the outside of the strawberry fruit which are called achenes. To have the largest berry possible, you need as many of these ovules to be successfully pollinated as possible. To avoid misshapen fruits the achenes need to be pollinated evenly and fully. With pollination, the receptacle tissue around the achenes will develop to form the strawberry fruit.

Strawberries have both male and female flower parts on the same flower and can self-pollinate.

Wind and rain can move pollen within the flower. However, this usually does not allow for full pollination of all the ovules. Bees, such as honeybees or bumblebees, are usually necessary to allow for complete pollination. Some flowers produce bigger berries when cross pollinated with pollen from other flowers. Incomplete pollination will often result in smaller or misshapen berries.

Strawberry flowers are not heavy nectar producers. However, bees do visit the flowers and studies have shown that where native bees are limited, adding hives of honeybees or bumble bees increased productivity. It is recommended that each flower receive 16-25 bee visits. This is particularly true of the king berries, which form from the first flower to open on a fruiting truss.

You can distinguish poor pollination from other types of damage because fruit will have variable achene (seed) size. Large seeds received pollination, while small seeds did not. Poor pollination is common when plants have been under row covers during bloom and when the bloom period has been rainy, stormy, or cold.



**G Johnson, University of Delaware** Strawberry deformities caused by poor pollination and cold injury.

#### <u>Scout Strawberries for Spider Mites</u> - David Owens, Extension Entomologist, owensd@udel.edu

Be sure to scout strawberry plantings for spider mites. Thresholds during the flowering and fruiting stage are 15 - 20 mites per leaflet. Take 10 mid-canopy leaflets (not the full leaf) per acre and count mites. If you count between 150 and 200 mites, a treatment is generally justified.

Two Spotted Spider Mites in Strawberries -

Jerry Brust, IPM Vegetable Specialist, University of Maryland; <u>jbrust@umd.edu</u>

I visited some strawberry fields over the last few days in Maryland. Most of the strawberry fields were on plastic but some were matted row production and a few in high tunnels. With the cooler weather we have had of late I was surprised to still find low levels of mites in the fields, with a few hot spots of mites in some high tunnels. There was only one species of mite found: the two spotted spider mite, Tetranychus urticae. Overwintering female two spotted spider mites are an orangish-red (Fig. 1) and most of the mites that can be seen with a naked eye will appear reddish in color. Spider mites overwinter in the soil or leaf litter, although they may remain somewhat active in high tunnels through the winter. I found mite eggs in several high tunnel strawberries, but not in any outdoor strawberries. The light yellowish eggs are pearl-like in appearance and are attached to the undersides of leaves or stems (Fig. 2). Feeding damage by mites that occurs before fruiting can cause the most loss in yield, but after the first strawberry harvest plants can tolerate much greater rates of infestation. Growers should check their strawberries for mites now, especially if you have them in a high tunnel. If mites are found now you need more than 5 mites per leaflet (1/3 of a leaf) to justify the expense of a miticide application.

The most difficult thing to achieve for good control is getting adequate spray coverage. Many of the spray applications do a good job of covering the top of the leaves but do a poor job of reaching the underside of the trifoliate. The underside area of the leaf that usually sees very

little chemical deposition is in the 'palm' of the leaf (Fig. 3). These are the areas where mites can still be found even after a few sprays and need to be carefully checked a few days after an application. Good coverage is essential. One grower uses a leaf blower-like backpack foggeratomizer sprayer and applies two sprays of 1% (by volume) horticultural oil 7-10 days apart. He gets excellent spray coverage on the underside of his leaves and consequently excellent control of mites. By using two applications about one week apart it is possible to control not only the adults and nymphs, but the eggs too. Oil is a good management tactic to use at this time of year as the plants are small and any possible burn from using the oil is a very low risk. An added benefit of the oil is that it is rather inexpensive. I would like to see more growers use something like oil now and save the other chemicals for later in the season when plants are much bigger and there is a flare up of mites or other pests. Using oils now will also greatly reduce any development of mite resistance to other chemicals over the course of the season. If miticides are needed there are many excellent miticides available.



Figure 1. Overwintered two spotted spider mite female with orangish-red coloration.



Figure 2. Many two spotted spider mite eggs (arrows) on back of a leaf



G Brust, University of Maryland Figure 3. Underside areas of strawberry leaf where mites can hide from spray applications

# Agronomic Crops

<u>Agronomic Crop Insect Scouting</u> - David Owens, Extension Entomologist, owensd@udel.edu

Updated Insect Control Recommendations for alfalfa, small grains, soybean, and corn have been posted to the UD insect pest management webpage:

https://www.udel.edu/academics/colleges/canr /cooperative-extension/sustainable-

production/pest-management/vegetable-fruit-

<u>field/</u>. Significant changes were made to alfalfa, corn and soybean, adding additional sampling and action threshold information for several pests, adding a couple of pest sections, and

including mention of various generic insecticides at the end of each guide. A sorghum guide will be forthcoming soon.

Small Grain and Early Season Insect Trapping We have reached predicted cereal leaf beetle egg lay in Georgetown. Last year, peak egg lay occurred about two weeks after reaching this degree day target. I have not heard of any reports suggesting significant cereal leaf beetle activity in the area, but if in doubt, scout!

A reported sighting of small true armyworm in the southern part of the state came in this week. The good news is that so far, moth flight activity has been low/normal. University of Kentucky has been trapping both true armyworm and black cutworm since 1993. In 2008, they experienced widespread outbreaks of true armyworm. Counts peaked many times higher than what they are currently trapping http://ipm.ca.uky.edu/awgraph. I mention UK's data because armyworm activity in our pheromone traps do not suggest that this year will have unusual worm activity in small grains. Trap counts for the week are as follows, with thanks to Joanne Whalen, Emily Zobel, and Maegan Perdue.

Location	TAW/night	BCW/night
Willards, MD	1.7	1
Salisbury, MD	0	
Laurel	0.4	5.1
Seaford	27.9	8.1
Harrington	8.9	5.3
Pearson's Corner	7.7	1.6
Sudlersville, MD	1	2.7
Smyrna	10.4	1.1

#### Alfalfa

Alfalfa weevil larvae ranged from 1<sup>st</sup> to 3<sup>rd</sup> instar at the end of last week in northern Sussex and some fields were above threshold and treated. Be sure to monitor the fields after treating; Virginia has seen isolated areas where some products achieved only poor control. For those of you in the northern part of the state, be sure to sample your alfalfa if you have not already.

#### Corn

Scout planted fields as soon as you have emergence for slug feeding. The weather

forecast is conducive to slug activity, and slug eggs are hatching out. Be especially wary on notill fields with a history of slugs and fields with brassica cover crops. There is anecdotal evidence from neighboring states that brassicas favor slug populations. There are no thresholds for slug feeding, and the good news is that corn is much more difficult to kill from slug feeding than soybean, but if you are seeing significant defoliation, slugs number 3 or more per square foot, and the forecast is calling for cloudy, wet weather you are at risk for continued slug feeding and slower plant growth.

<u>Wheat and Barley Disease Updates</u> - Alyssa Koehler, Extension Field Crops Pathologist; <u>akoehler@udel.edu</u>

Across much of the region, barley is heading and wheat is at Feekes 9-10. There have been a few reports of scattered powdery mildew, but nothing at levels warranting a fungicide application. In a few fields, symptoms of potential Barley Yellow Dwarf Virus (BYDV) are becoming visible. Symptoms can include yellow to purple leaf discoloration, curling of the leaves, and stunting (Figure 1). Leaf discoloration begins at the tip and the color and level of symptom development can vary based on variety, weather, fertility, and a number of other factors. In wheat, early infections are typically associated with more stunting and redpurple to yellow leaves, while later infections tend to have yellow flag leaves without stunting. Aphids transmit BYDV, with most infection occurring in the fall and early winter. Fall infection is more damaging than infection of mature plants. Resistant varieties are available in oat, but there is only limited host resistance in barley and wheat. At this point in the season, spraying for aphids will not have an impact on disease levels.



Figure 1. Yellow to purple discoloration symptoms of Barley Yellow Dwarf Virus.

#### The Fusarium Risk Tool

http://www.wheatscab.psu.edu/ has most of our region at low risk this week (Figure 2). If making a fungicide application in barley, the optimum stage to protect barley glumes from FHB is when the spike is fully emerged from the boot and florets are exposed (Figure 3). Unlike wheat, it is better to apply fungicides a little too early rather than too late in barley. In wheat, ideal application is Feekes 10.5.1., when yellow anthers are visible in the center of the spike. Application up to 4-6 days after anthesis in wheat will still provide FHB and DON control. We have had some cold nights this week. At heading/flowering wheat should be able to withstand temperatures of 28°F for two hours. Luckily, the temperatures were not below 32°F in most of our areas. Freeze damage at heading and flowering can cause sterility that impacts

yield. Freeze damage can result in bleached, discolored heads, which is also the symptom we look for with FHB. Freeze damaged heads are often empty and deformed with distorted awns; heads with FHB will not be deformed.



Figure 2. Fusarium Risk Tool Prediction for April 16, 2020



Figure 3. Stages of barley at or near spike emergence, with the furthest right spike at optimum stage for fungicide application.

### Current Soil Temperatures and Corn

<u>Planting</u> - Jarrod O. Miller, Extension Agronomist, jarrod@udel.edu

The preferred soil temperature for corn germination is 50°F, which allows the seed to begin root and shoot growth. When soils fall below this temperature, germination may be limited and seeds may rot in the ground. Many of the weather stations on DEOS (http://www.deos.udel.edu/) have soil temperature as an option, so you can track current conditions. Soil temperatures have been consistent across the state, ranging from 47-63°F in Newark, Dover, and Georgetown, even as air temperatures have ranged from 34-77°F. Soils are a pretty good insulator, and will not change as rapidly as air temperature. A slower change in soil temperatures will occur when they are saturated or have additional cover from crop residues or no-till. So be sure to check the soil temperatures at each station, and not just rely on local air temperatures.

While predicted highs over the next few days are in the 50s to 60s, nighttime temperatures could be in the 40s or lower. Consider that even if seeds survive, germination will be delayed, and won't necessarily get you ahead. In Georgetown last year, corn took 10 days to emerge when planted April 24<sup>th</sup>, 8 days to emerge April 30<sup>th</sup>, and only 5 days to emerge May 16<sup>th</sup>. Considering that planting decisions also hinge on moving equipment and balancing all the field work that needs to be done, planting earlier may be necessary. But if there is still time to wait, letting soils warm up will improve chances of germination and higher stand counts.

# General

Guess the Pest! Week 2 Answer: Seed Corn Maggot - David Owens, Extension Entomologist, owensd@udel.edu

Congratulations to Michael Crossley for correctly identifying seedcorn maggot as the culprit behind the missing pea stand! The photo was taken of a field in which we try to do everything wrong: disking in fallow weeds (or green manure) plus making additional organic matter inputs (chicken manure). We time this to coincide with peak adult emergence and wait a few days before planting into a field loaded with flies and eggs or early maggots. This year, we pulled it off quite well and had between 50 and 100% stand loss, depending on the treatment. Previous years we had significant infestations but little stand loss.



#### <u>Guess the Pest! Week 3</u> - David Owens, Extension Entomologist, <u>owensd@udel.edu</u>

Guess the Pest! is back by popular demand! This year there will only be an end-of-season drawing for a prize (as yet to be determined). You can't win if you don't play at least once during the season. Weekly winners will still be recognized.

Test your pest management knowledge by clicking on the GUESS THE PEST logo or following this link:

https://docs.google.com/forms/d/e/1FAlpQLSfU PYLZnTRsol46hXmgqj8fvt5f8-JI0eEUHb3QJaNDLG\_4kg/viewform?c=0&w=1 and submitting your best guess.

This is one of a group of semi beneficial insects that can also be serious pests. Do NOT pick these up. Later in the season, other members of the group can be fairly common in soybean. As Dr. Jerry Brust has written on before, they can be pestiferous on certain leafy vegetables. What sort of beetle is this? Click on the Guess the Pest logo to enter your name, email, and your answer. The winner and answer will be revealed next week.





### A Farmer's Guide to COVID-19 Relief -

Maria Pippidis, Extension Educator Family & Consumer Sciences; pippidis@udel.edu

The Farmers' Legal Action Group has produced a guide to COVID-19 Relief. Access it online at:

http://www.flaginc.org/2020/04/farmersguide-to-covid-19-relief/. This helpful guide provides help to identify resources as they relate to Farm audiences. Several of the programs discussed in this Guide are the product of the CARES Act— technically known as the Coronavirus Aid, Relief, and Economic Security Act. The CARES Act became law on March 27, 2020. The following topics are discussed in this Guide.

- Recovery Rebates for Individuals
- SBA Paycheck Protection Program (PPP)
- SBA Economic Injury Disaster Loan (EIDL) Program
- Unemployment Insurance
- Foreclosure Moratorium and Loan Forbearance
- Funding for the Commodity Credit Corporation (CCC)
- Funding for Specialty Crop and Other Producers
- Changes to the Bankruptcy Code
- Regulatory Guidance for Financial Institutions
- USDA Administrative Actions
- Crop Insurance and Non-Insured Crop Disaster Assistance Program (NAP)
- Court and State and Tribal Government Responses
- Scams and Discrimination

### <u>New Podcast from UD Extension:</u> Extension302

Join the crew of Extension302 (Blake Moore, Jake Jones, Dan Severson and Katie Young) as they dive into current topics affecting YOU — the people of Delaware! Brought to you the University of Delaware Cooperative Extension, this podcast offers unbiased scientifically-based conversation featuring guest experts! Topics range from agricultural sciences to nutrition, mindfulness, financial literacy and more!

Episode one features the effects of COVID-19 on the agricultural community. Listen online >>



### Resources on Legal Impacts of the COVID-19 Pandemic

The agricultural community has had to quickly adapt to the legal and other impacts of the global COVID-19 pandemic.

The Agriculture Law Education Initiative team at University of Maryland has been working to develop resources to help address some of these issues. Information about contracts, labor, insurance, and other information is now available on the ALEI website at http://umaglaw.org/legal-resources/covid-19resources/

This page will be updated regularly as more resources are created to address this evolving situation.

# Announcements

#### **Stormwater Workshop Series**

Carvel Research and Education Center 16483 County Seat Hwy Georgetown, DE

The public is invited to participate in a free stormwater workshop series. This series is made possible by the Sussex Conservation District (SCD), University of Delaware Cooperative Extension (UDCE), and the Delaware Department of Natural Resources and Environmental Control (DNREC).

The workshops are designed to present property owners, homeowner associations and property maintenance companies a holistic approach to stormwater and open space management. SCD, UDCE and DNREC will provide technical resources to aid in the management and enhancement of your community. Each workshop will address seasonal issues many property owners and communities encounter.

June 18, 2020 - Preventative maintenance, irrigation management and water conservation practices.

<u>Aug. 13, 2020</u> - Water quality, invasive species management and stormwater facility winterization tips.

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

# Weather Summary

Carvel Research and Education Center Georgetown, DE

### Week of April 9 to April 15, 2020

### Rainfall:

- 0.03 inch: April 9 0.08 inch: April 12 1.04 inch: April 13 0.22 inch: April 15
- 0.22 inch: April 15

## Air Temperature:

Highs ranged from 77°F on April 13 to 51°F on April 10.

Lows ranged from 59°F on April 13 to 33°F on April 11

## Soil Temperature:

55.4°F average

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

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

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