

WEEKLY CROP UPDATE



UNIVERSITY OF DELAWARE
COOPERATIVE
EXTENSION

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May 5, 2023

Vegetable Crops

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

Cucurbits

With warmer weather in the forecast, begin scouting for striped cucumber beetle. They usually begin rolling into fields between May 14 and May 21. It is important to look at multiple locations because males release aggregation pheromones that concentrate adults in relatively small areas of fields. Pay attention to transplant wagons as well. A tray drench can be used to kill beetles infesting transplant wagons, but will not provide long residual control once planted. Tray drenches can be used to manage aphid populations.

Snap Beans

Be sure to have an insecticide seed treatment on snap beans being planted in cool, wet soil. Although warmer weather will help get snap beans out of the ground faster, seedcorn maggot activity is high right now. Damage often appears as a plant with expanded cotyledons but a damaged or dead growing point, swollen stems underground, and severe stunting.

Greenhouse Vegetables

Vegetables grown in greenhouses may face injury from aphids, thrips, spider mites, and occasionally other insect pests. The [Commercial Vegetable Production Guide](#) has a section (E) that lists insecticides labeled for greenhouse use.

Cole Crops

Diamondback moth activity continues. Scout plants carefully and identify species present. Diamondback moth will have a bit of a bumpy appearance, hold their anal prolegs in a V-pattern, and wriggle violently when prodded. Imported cabbageworm early instars are yellow changing to a fuzzy green. They tend to rest on upper leaf surfaces near the midveins and grow to a sizeable caterpillar. Cole crops with just imported cabbageworm can be treated with a wide range of insecticides, while diamondback moth tends to be resistant to pyrethroids. Remember, there are a lot of natural enemies of all the worm complex. Thus, preserving those natural enemies by limiting use of pyrethroids and other broad spectrum insecticide modes of action is very important for long term worm management.

Poor Stands and Plant Vigor in Fresh

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

Growers are reporting issues with stands and vigor in sweet corn fields in 2023, especially in early planted fields. There can be many causes for stand loss and weak seedlings: surface compaction and crusting, birds, soil insects, slugs, cold soils that delay emergence, soil diseases affecting seeds or seedlings, wet soils, fertilizer injury, deep planting, and herbicide injury are just a few examples.

Seedcorn maggot damage to sweet corn in 2023 has been significant. David Owens, UD Extension

Entomologist recorded a YouTube video discussing seedcorn maggot which can be accessed here:

<https://www.youtube.com/watch?v=nDhj8QTz8hW>.

When checking sweet corn fields with vigor and stand problems, it is important to dig up seeds and affected plants and examine the seed remnants, roots, and mesocotyl (stem that pushes the seed leaf to emerge above the ground). Corn seedling survival and early vigor is directly tied to a healthy seed kernel and mesocotyl from planting through the six-leaf stage. Any damage to the seed or mesocotyl during this period can lead to stunted or weak seedlings, and in severe cases, seedling death. This is because the corn seedling depends on the seed for food to grow for several weeks after emergence until sufficient leaf area has been produced and nodal roots have become established. The seed kernel provides the means for early roots to grow and these food reserves are also mobilized and transported through the mesocotyl to grow the first stalk and leaf tissue. The mesocotyl also serves to transport water and mineral nutrients from the seedling roots.

Sweet corn is more susceptible to stand loss and poor vigor problems than field corn because the seed has less food reserves. Shrunken types (supersweet, sugary enhanced, augmented shrunken, synergistic varieties) have even less stored food than “normal” types and therefore are more susceptible to stand problems.

I have looked at sweet corn fields with stand loss and vigor problems (uneven growth) over the years. Often, when digging up the seedlings and examining the seed remnants and mesocotyls, the kernels will be disintegrated and there will be darkening at the mesocotyl attachment. This means that the seeds deteriorated prematurely and the full content of the food reserves in the seed were not available for seedling development, leading to the stand and vigor issues. Premature seed deterioration and/or poor vigor seedlings can be due to diseases that cause seed rots, seedling blights and/or root rots. Soil insects can cause seed deterioration by feeding on seed contents or creating entrance wounds for disease organisms. In addition, certain soil insects and slugs can feed on the

mesocotyl causing seedlings to collapse. Sweet corn that takes more than 10 days to emerge is at great risk of injury due to insects and diseases as seed treatments dissipate.

Cold stress and cold soils are common stress factors leading to poor stands. Often growers are pushing the limits and are planting sweet corn very early. While field corn will start to germinate at 50°F, many types of sweet corn need much warmer soils. This is especially true of supersweet varieties and other shrunken types, which perform best at higher soil temperatures (above 60°F). When soil temperatures are below 55°F, germination is greatly extended. Food nutrients are mobilized in the seed but are not being utilized rapidly by the plant. The seed then becomes a perfect food source for many soil microorganisms. On a positive note, many of the newer sweet corn varieties have much more cold tolerance and emerge more rapidly in cold soils.

Stand issues are often related to the inherent poor vigor of sweet corn. Work with seed suppliers to obtain their best lots with the largest seed sizes. Obtain varieties that perform better under cold stress. When possible, obtain reports from sweet corn trials to assess which varieties are the most cold tolerant. Request seed treatment information and select treatments with the best protection potential. There are in-furrow fungicide options; however, research is limited with sweet corn in our region.

Growers often face the decision on whether to keep plantings with poor stands. This is most often a marketing decision based on the need for and value of early sweet corn for that farm. An estimate of potential marketable ears will be based on stand counts of full vigor plants from 20-40 sites throughout the field. This stand count information then can be used to estimate the value of the field as is versus the value of a later planted full stand crop.

Transplants - Understanding the Differences in Rooting and Plant Survival in Cold Soils -Gordon Johnson, *Extension Vegetable & Fruit Specialist*; gcjohn@udel.edu

Vegetables that have been transplanted in the last week risk significant losses or stunting due to the cold, rainy, and cloudy conditions.

To explain this problem more fully, it is necessary to understand how different vegetables regenerate roots and how this affects plant survival after transplanting. Soil temperature is very important to plant establishment. Rate of root growth or regeneration is temperature dependent with cool season vegetables such as cabbage or lettuce being able to produce new roots at much lower temperatures than warm season vegetables such as eggplant or watermelon. In soils that are below critical temperatures (60-65°F for watermelon and cantaloupes for example) roots do not grow into the soil bed and transplants will be subject to desiccation losses as soils dry around the root ball. The smaller the root ball (the smaller the tray cell size), the more quickly desiccation and plant loss can occur. For Solanaceous crops tolerance to cold soil is as follows Tomatoes > Peppers > Eggplant. For cucurbits tolerance to cold soils is in this order Cucumber > Summer Squash > Muskmelon = Watermelon.

A second problem relates to where plants can grow or regenerate new roots from. Solanaceous vegetables (tomatoes, peppers, eggplant) can generate new roots from both the existing transplant root system and also from stem tissue. Stem generated roots are called adventitious roots and in solanaceous transplants they can grow at any place along the stem above the root system. There is still some bare root transplant production of solanaceous crops because of this ability to regenerate roots.



Adventitious roots on tomato transplant stem.

In contrast, cucurbit transplants will only generate adventitious roots at above-ground nodes and no nodal tissue will be in contact with soils at planting time in the spring. Therefore, all new roots in cucurbits must be generated from the existing root system. Cucurbit root systems that are damaged (torn or detached) during transplanting will not survive (Solanaceous crops will). Cucurbit crops must be firmly rooted in the plant trays so they will pull out with no tearing, otherwise plant losses will occur.



Cucurbit transplants will only grow from existing roots in the root ball (circle). Adventitious roots

are only generated at nodes (arrow) and will not form on new transplants.

Viruses Turning Up in High Tunnel

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

In the last week or so high tunnel tomato plants have been reported that look a bit squirrely. I thought it was possibly herbicide or virus or nutrient problems. After eliminating the first and third possibilities we had the plants tested for a battery of viruses. There were 3 viruses found. The most unusual one was the Pepino mosaic virus, which belongs to the Potexviruses. This virus is very easily transmitted mechanically and has a low seed transmission rate. Seed transmission occurs at rates of less than one in a thousand when seed is not properly cleaned. The virus is external, contaminating the seed coat and not the embryo or endosperm. Symptoms vary greatly with fruit marbling being the most typical and economically devastating symptom. You can also have fruit discoloration, open fruit, leaf blistering or bubbling, leaf chlorosis and yellow angular leaf spots. The severity of the Pepino mosaic virus symptoms is dependent on environmental conditions. As the infected plants mature the foliar symptoms usually disappear, but not the fruit problems. Prevention of infection is through stringent hygiene measures as the virus is spread primarily by mechanical methods. The Pepino mosaic virus is a newer one but is appearing more often in tomato production areas.

The other two viruses found were more common: Tobacco mosaic virus and tomato mosaic virus. Tobacco mosaic virus (TMV) is one of the most highly persistent tomato diseases because it can remain viable without a host for many years and it is able to withstand high temperatures. Both viruses are spread primarily by mechanical methods. Workers and their equipment can become contaminated when they touch infected plants. **Symptoms are rather general** and appear as yellow-green mottling on leaves with flowers and leaflets being curled, distorted, and smaller than normal in size. Generally, the fruit from TMV infected plants do not show mosaic

symptoms but may be reduced in size and number and may develop an internal browning that most often appears in fruits of the first cluster. Severe strains of TMV and tomato mosaic virus can cause the lower leaves to turn downward at the petiole and become rough and crinkled. Some tomato varieties when infected with TMV or tomato mosaic virus can develop dead areas on leaves, stems and roots. As with the Pepino mosaic virus the best control for these two viruses is strict hygiene and not using contaminated seed.



Figure 1. Tomato plants infected with three different mosaic viruses

Fruit Crops

Fruit Drop in Tree Fruits -Gordon Johnson,
Extension Vegetable & Fruit Specialist;
gcjohn@udel.edu

We are currently seeing the effects of April cold damage to stone fruits. This is evident by small fruits that stop growing while others continue to put on size. These fruits will end up dropping off trees. In stone fruit, some fruit that is not fertilized will remain on the plant for 25-50 days after bloom and then will drop before pit hardening starts.



G Johnson, University of Delaware

A peach branch showing fully pollinated fruit on the left and two cold damaged fruit on the right that will drop off the tree.



G Johnson, University of Delaware

Cold damaged peach fruit showing empty pits where embryo was killed.

Natural fruit drop is a result of unfertilized or poorly fertilized seeds, cold injury, competition between fruits, or shading. Poor pollination may be a result of cold damage or rainy weather during bloom in self-fertile fruits such as peaches or poor insect pollinator activity during flowering in insect pollinated fruits such as apples.

In addition, fruit trees commonly set more fruit than they will carry and chemical, mechanical, or hand thinning is done to reduce fruit loads, increase fruit size, and limit alternate year bearing. Natural fruit drop also occurs and is often called “May Drop” or “June Drop”. This is often accompanied by some leaf drop, especially in stone fruits. This fruit drop is due to competition between fruit for sugars stored and produced by the tree. A tree can only carry a certain load of fruit and will naturally drop smaller and weaker fruit during this period. However, thinning should have been accomplished before this competitive fruit drop occurs. Having fruit remain on the plant until natural competitive drop will use up food reserves in the plant and reduce the size potential of remaining fruit. Fewer cells will have been produced by the fruit remaining on the plant and therefore fruit size will not be recovered.

Another cause of fruit drop is cloudy weather during the period 5 to 7 weeks after bloom. A continuous 4-day period of cloudy days during this period will also cause fruit to drop. In

addition, defoliation due to disease such as peach leaf curl, chemical injury such as copper fungicide damage, or severe storms can cause fruit drop during this critical period.

Cyclamen Mites Found in Strawberries -

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

Cyclamen mites have been found in a few Maryland strawberry fields in the last few weeks. They are not much of a problem now but when we start to warm up, they may become more of a problem along with two spotted spider mites. The cyclamen mites (*Phytonemus pallidus*) have been found most often in plasticulture strawberries and less often in matted row systems. Adult cyclamen mites are usually never seen as they are only a quarter of a mm long and a 20X hand lens or dissecting microscope is needed to see them.

Adult mites are oval-shaped and a glossy creamy orange (Fig. 1) with males being smaller than females. The hind legs of females are thread-like and in males are pincerlike (the male uses these hind legs to transport female pupae to new locations on the plant). The eggs are translucent and comparatively large, about ½ the size of an adult (Fig. 1). Masses of eggs in leaf crevices can be so numerous that they look like tiny piles of salt. Female adults overwinter in strawberry crowns and also can be present on transplants. Female mites lay their eggs on strawberry leaves that hatch into tiny, white, six-legged larvae (Fig. 1). The entire life cycle of the cyclamen mite is less than 3 weeks and therefore populations can build quickly. Although there are multiple generations each year, populations tend to peak in early spring and again in late summer.

Cyclamen mites use their piercing-sucking mouthparts to feed on plant material. Symptoms of infestation can be found throughout the plant. However, at low populations cyclamen mites can usually be found along the midvein of young, unfolded leaves and under the calyx of newly emerged flower buds. As numbers increase mites can be found anywhere on the plant. The infested leaves will appear stunted

and crumpled (Fig. 2), while flowers wither and die and fruit becomes shrunken with protruding seeds (Fig. 3). By the time these symptoms appear, it is too late to limit damage, so cyclamen mites should be managed preventively. Treatments should be applied when 1 leaf in 10 shows cyclamen mite damage.

Growers should watch for deformed leaves starting when new buds emerge from the crown and continuing until harvest. Older fields will most likely have more problems. In order to be sure of the presence of cyclamen mite, you need to examine the newest leaves in the crown, specifically the mid vein and lower part of a leaf where it joins the petiole. Magnification (20-40X) is recommended for confirmation of cyclamen mites.

Early detection of cyclamen mites is essential in achieving best control. Thorough spray coverage of the crown leaves is important for good control, so high volumes of water are needed (60-100 gal/a). Horticultural oils can be used if temperatures are below 88 °F. Agri-Mek SC or Portal also can be used for mite control. Predatory mites can be used and work best if cyclamen mite populations are small and confined to scattered hot-spots in a field.



Figure 1. Adult female cyclamen mite (yellow arrow), eggs (white arrows) and larva (red arrow)



Ministry of Agriculture, Food and Rural Affairs Ontario Canada
Figure 2. Cyclamen mite damage to strawberry—crinkled deformed younger leaves



Ministry of Agriculture, Food and Rural Affairs Ontario Canada
Figure 3. Cyclamen mite damage to strawberry fruit-protruding seeds

Agronomic Crops

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

Soybean

Check stands on all April-planted soybeans now. Rain is feast or famine this year, and right now, rain, soil moisture, and cool temperatures have combined to cause major problems in soybean fields planted within the last two weeks. Gray garden slug eggs have hatched recently, causing

a very large increase in slug populations. In one field we visited, soybeans were largely up and out of the ground and expanding unifoliates before last weekend’s rain came in. I am optimistic that those soybeans will outrun major damage. Soybeans that were just starting to crack might not be so fortunate, and now that eggs have hatched, slugs are going to be increasing in size as we start planting into wet soil. Close your seed slots. Use row cleaners to move residue out of the way. If using any sort of tillage, be sure to have an insecticidal seed treatment on the beans, because cool wet weather combined with tillage sets fields up for seedcorn maggot damage. Reports came in at the end of this week, and more will come in next week of seedcorn maggot damage to soybean stands. Soybean affected by SCM will be stunted, growing slower than healthy plants, the stems below ground will be swollen and off-color. The center portion of the vascular system will turn brown. As damage progresses, plants will wilt and collapse. There are no rescue treatments for SCM. If you see SCM damage, wait a week or so to assess plant stand, this should give weak plants enough time to fall out of the stand, giving you the ability to make a better stand assessment. Narrower row soybean under irrigated conditions and with a branching habit can compensate for a surprising amount of stand loss, down to as few as 70 thousand plants.



M Malone, University of Delaware
 Seedcorn maggot damage to soybean

Corn

Cutworm injury reports are coming in, along with reports of bird damage. Cutworm tend to make burrows scattered around the fields and may drag plants into burrows. Birds tend more to pluck plants out, leaving holes at the base of plants and may pull up below ground portions of the plant. We had a major flight of black cutworm at the beginning of April in the northern half of the state. Those cutworm larvae may be large enough to begin cutting plants this week. Pay attention to weedy fields, fields with late terminated cover crop, and late planted fields. Another pest that will be hiding in small grain cover crops at this point is brown stink bug. Fields planted into green or late terminated rye, wheat, or barley are at greater risk for stink bug damage. Treat if you find more than 13 stink bugs on or at the base of 100 plants.

Early Season Moth Activity

Many thanks to Haley Sater with UMD Cooperative Extension and Joanne Whalen, Extension entomologist emeritus extraordinaire for assistance with checking traps.

| Location | # of Nights | Total Catch | |
|------------------|-------------|-------------|-----|
| | | TAW | BCW |
| Willards, MD | 13 | --- | 27 |
| Salisbury, MD | 7 | 0 | 0 |
| Seaford, DE | 6 | 2 | 4 |
| Sudlersville, MD | 7 | 0 | 21 |
| Harrington, DE | 6 | 63 | 1 |
| Smyrna, DE | 7 | 48 | 66 |
| Middletown, DE | 7 | 5 | 1 |

Small Grain

Scout for armyworm activity, particularly in the northern part of the state. Examine first the debris and undergrowth on the ground surface along field margins and lodged areas. Check for small armyworms curled in a C-shape at the base of plants or under debris and weeds. Examine 5 linear foot of row in at least 10 locations throughout a field, count the worms and note any leaf defoliation and/or head clipping. Armyworm frass or droppings also may be found on the soil surface. As a general rule, barley should be treated if the number of armyworms exceeds one per linear foot between rows. In wheat, armyworms tend to nibble on the tips of kernels rather than clip heads; thus, populations

of one to two worms per linear foot between rows are required to justify control. In high management wheat fields, treatment is recommended when armyworm levels exceed 3 to 5 per square foot of surface area.

Small Grains Disease Updates - Alyssa Koehler, Extension Field Crops Pathologist; akoehler@udel.edu

Wheat anthesis (flowering) is underway. Up until the rains this past weekend, we have been at low FHB risk. We are currently tracking as high risk for very susceptible varieties (Figure 1) and low-medium risk for varieties with some level of resistance (Figure 2). If you are planning for wheat fungicide application hopefully you have been scouting frequently looking for yellow anthers in the center of the wheat head (Figure 3) to signal that flowering has begun (Feekes 10.5.1). We can usually expect flowers to start showing up on wheat heads 3-5 days after full head emergence, but you may have seen a delay with the cooler weather, stretching this process out to 7-10 days. Anthers can remain attached after flowering, but become pale white. For best mycotoxin (DON) control, it is better to be at flowering or a few days beyond than to spray too early when heads are not out yet (especially those secondary tillers). Many fields are now at prime time for optimal application.

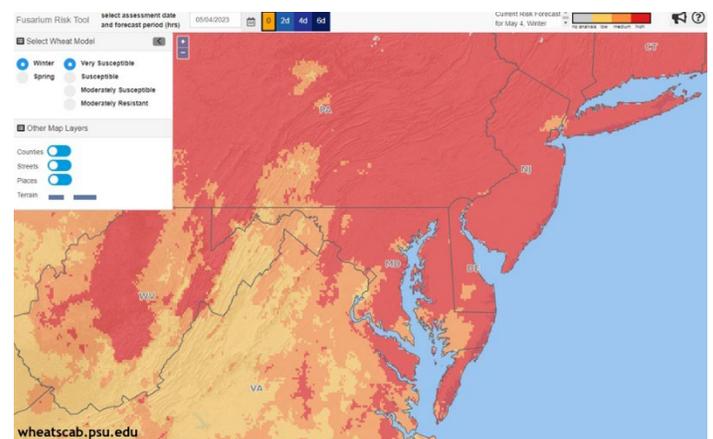


Figure 1. FHB Risk Model for very susceptible varieties May 4, 2023

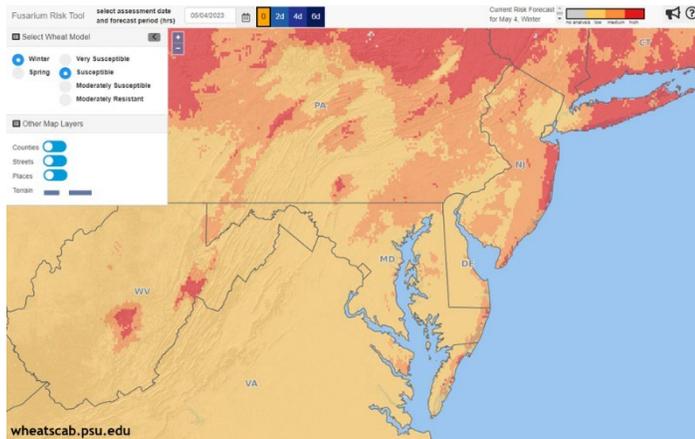


Figure 2. FHB Risk Model for susceptible varieties May 4, 2023



Figure 3. Wheat at flowering (Feekes 10.5.1) with yellow anthers visible 3-4 days after heads emerge

Pythium Root Rot in Corn - Alyssa Koehler,
Extension Field Crops Pathologist;
akoehler@udel.edu

Wet conditions around the time of planting can favor the oomycete pathogen, *Pythium*. Symptoms of *Pythium* Root Rot can include stunted, slower growing plants, to severely infected, dead plants (Figure 1). Infected plants typically have brown, rotted roots and mesocotyl (Figure 2). As root systems continue to develop, seedlings can survive mild to moderate *Pythium* infections, but final yield is often impacted. Unfortunately, plants that are infected early generally maintain reduced root systems throughout the season, with ears that are poorly formed (Figure 3). In some cases, infected plants may be barren with no ear formed. In trials over the past 3 seasons we have observed that yield potential of infected plants is reduced by 60% on average. Seed treatments with oomycete activity can provide some protection within 10-14 days after planting, and can be helpful for improving seedling emergence and reducing pre-emergent damping off. To date, we have recovered 14 species associated with corn in DE/MD, with *Pythium graminicola* being most common. *Pythium* species differ in optimal temperatures for growth and can have varying responses to fungicides. In lab trials, the newly launched product Vayantis is looking promising for activity across multiple species. We will be screening this seed treatment in field trials this season. The weather over the past week may be favorable for development of *Pythium* in corn that was planted throughout April. If you need assistance in identifying if you have *Pythium* in your field, contact Alyssa Koehler, akoehler@udel.edu.



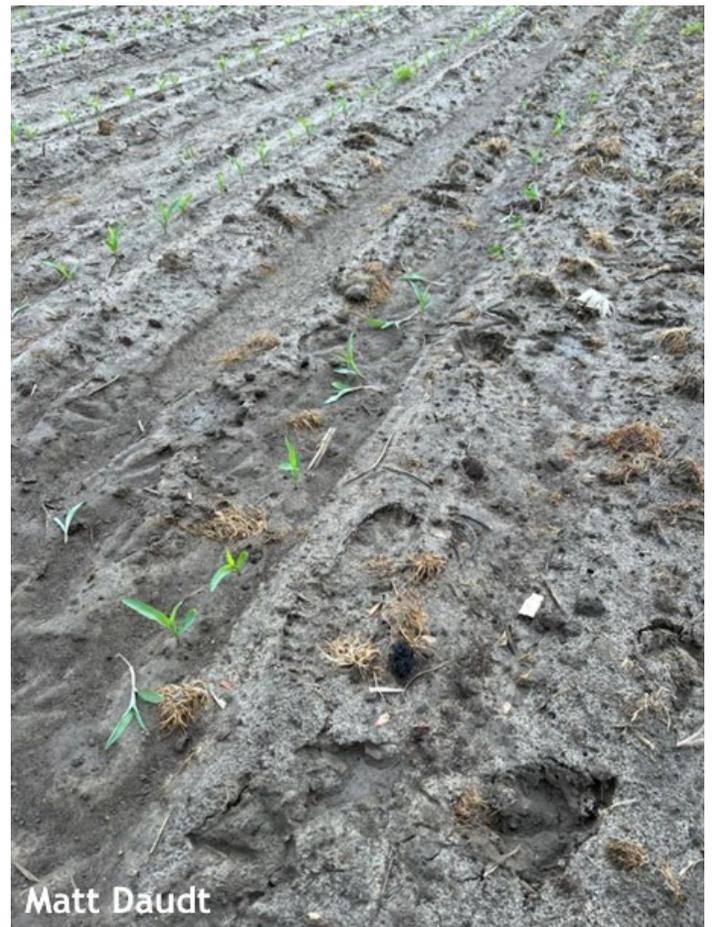
Figure 1. Corn seedlings with post-emergent damping-off caused by *Pythium* spp.

General

Guess the Pest! April 21 Answer: Bird

Damage- David Owens, Extension Entomologist, owensd@udel.edu

Congratulations to Keith McGowan and others for correctly identifying the damage in last week's photo as bird damage. A guaranteed winning guess would have been Matt Daudt pulling plants up, but no one suggested him despite my best effort to implicate him in the photo. My shoe size is a good deal smaller.



Note how the plants have been pulled completely out of the ground, showing the below ground, pale portion of the stem and the root but no seed. This year, EPA canceled all state uses of the Avipel dry hopper box treatment. If you notice more bird damage in fields, please let us know so that we can forward your observations to both EPA and the registrant to



Figure 2. Corn seedling with necrotic, brown mesocotyl following infection by a *Pythium* spp.



Estimated yield: 105 bu/acre



Estimated yield: 224 bu/acre

A Koehler, University of Delaware

Figure 3. Photos from paired field trial of *Pythium* infected (top) v. healthy corn plant (bottom).

encourage them to bridge the regulatory hurdles for next season.

Cutworm damage can look similar, but cutworms will chew the plant off at the soil surface. They may partially drag the cut end of the plant under dirt clods to snack on later. With cutworm, you may also see small holes in the soil surface scattered across and between rows where they have or are currently hiding.



Guess the Pest! May 5 - David Owens, *Extension Entomologist*, owensd@udel.edu

This year, Guess The Pest participants will be entered into an end of season sweep net drawing (as well as other potential items). To enter a guess, click on the Guess The Pest Logo or by visiting: <http://www.udel.edu/008255>

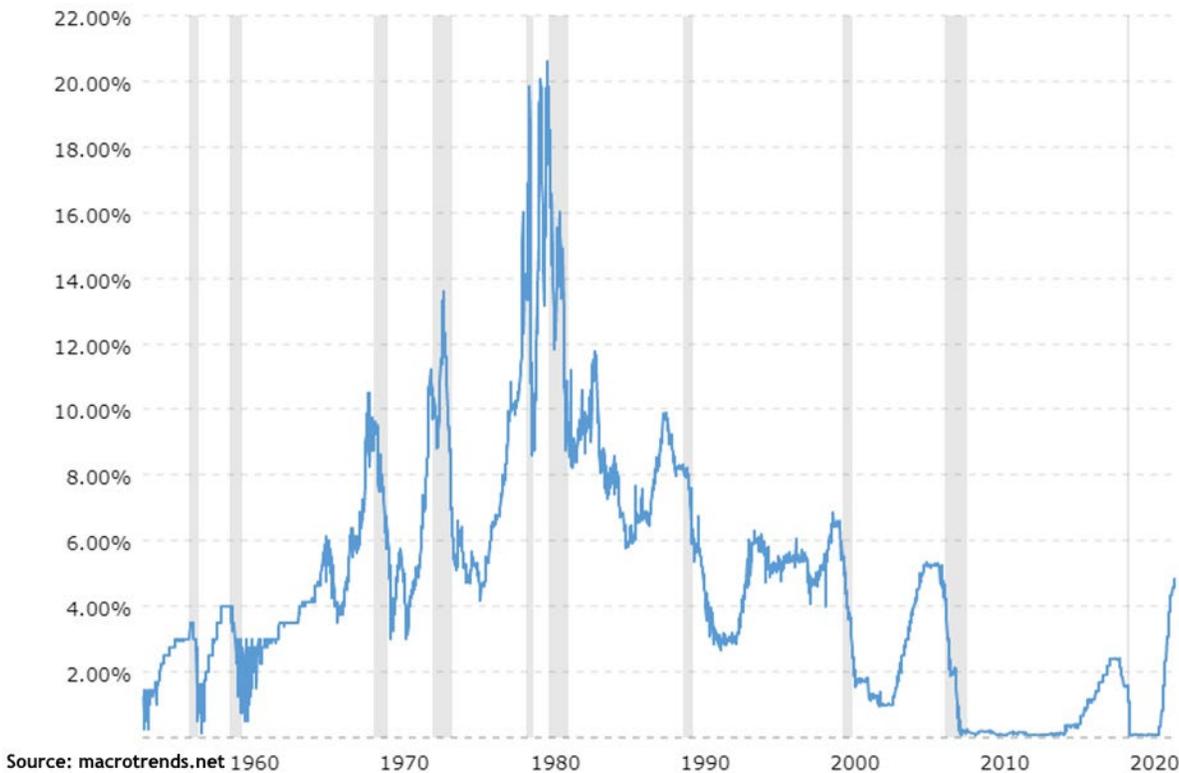
This week, I thought I would take a brief break from agricultural pests to test your awareness of a major landscape pest that is active now. I have found a couple of these worms at my house and this week had one in a pheromone trap! What species is it?



Karla Salp, Washington State Department of Agriculture

Farm Management Tips for Navigating a High Interest Rate Environment - Nate Bruce, *Farm Business Management Specialist*, nsbruce@udel.edu

The Federal Reserve increased interest rates by a quarter point this past week. Interest rates are now at a 16 year high. This is the 10th straight consecutive interest rate hike over the past year. The Federal Reserve chair, Jerome Powell stated that they do not anticipate any more interest rate increases but will make future decisions based on incoming data. Below is a 62-year historical chart of the federal funds rate. Recessions are shown in the gray areas of the graph.



Producers that farmed during the farm financial crisis of the 1980s remember the high interest rates of that time. Any long-term debts you currently have could be at a cheaper rate than the rates you can borrow money currently. There is less of an incentive to pay off long term debts that can benefit your operation over the long run. Let your money work for you and minimize your operations interest cost. During the current economic environment, consider holding onto cash reserves. Cash reserves can be used to offset any shortfalls in being able to pay back expenses, particularly when high input costs and low commodity prices put pressure on a crop's ability to cash flow. Holding a cash reserve will potentially limit, or prevent, the need to refinance operating expenses over a long period of time. Although interest rates have risen tremendously over the course of the past year, the 1980s have taught us lessons on how to navigate an environment with high interest rates.

Announcements

2023 Chrysanthemum Seminar

Tuesday May 9, 2023 2:00-5:00 p.m.

Delaware Department of Agriculture

2320 S. DuPont Hwy

Dover, DE 19901

This first time workshop is a great opportunity for new and established growers of chrysanthemums.

Agenda

2:00 – 2:10

Welcome and DE Department of Ag Regulations, Inspections, Licensing

Jeff Brothers, DE Department of Ag

2:10 – 3:00

Mum Production Practices

Nick Flax, Ball Seed Company

Producing high-quality garden mums boils down to a few key factors: healthy inputs, appropriate crop scheduling, and diligent management of crop culture to combat in-season challenges. This presentation will cover start-to-finish production considerations, including: input selection, growing-media concerns,

pinching, watering and fertility management, natural-season vs. black-cloth production, and benchmarking your mums' progress using a start-to-finish growth management approach.

3:00 – 3:50

Chrysanthemum diseases and disease management
Jill Pollok and Morgan Oliver, University of Delaware

Common chrysanthemum diseases we see in the UD Plant Diagnostic Clinic, which diseases to be on the lookout for, and how to prevent and manage chrysanthemum diseases.

4:00 – 4:50

Chrysanthemum pests and integrated pest management

Brian Kunkel, University of Delaware

Common chrysanthemum pests and integrated pest management practices for mum production.

Cost is \$15 (pay at the door with cash or check)

- 2 pesticide credits to DE for 03 Ornamental & Turf
- 2 pesticide credits to PA for core or private applicators

[Register Online](#) or call (302) 698-4500

Pest & Beneficial Insect & Plant Disease Walks

Sussex Pest Walk: June 6, 4:00-6:00 pm

Kent Pest Walk: June 13, 4:00-6:00 pm

NCC Pest Walk: June 15, 4:00-6:00 pm

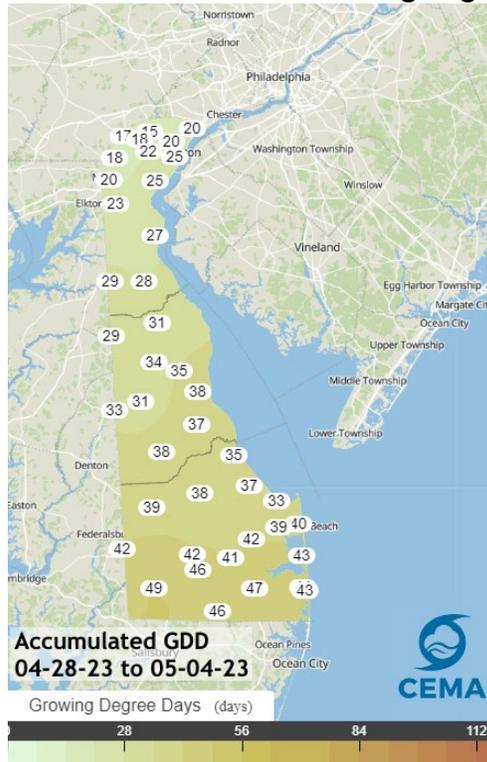
Diagnostics hands-on workshop: July 11

Save the Dates! Featuring Experts Jill Pollok, Brian Kunkel & John Emerson.

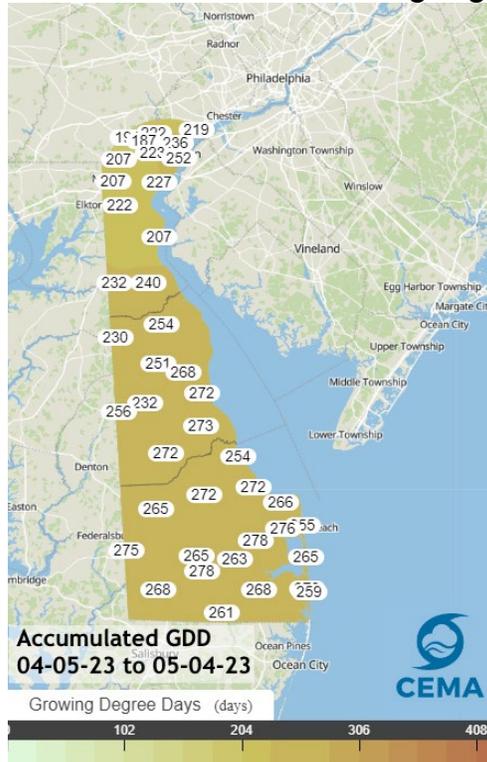
More information to follow.

Weather Summary

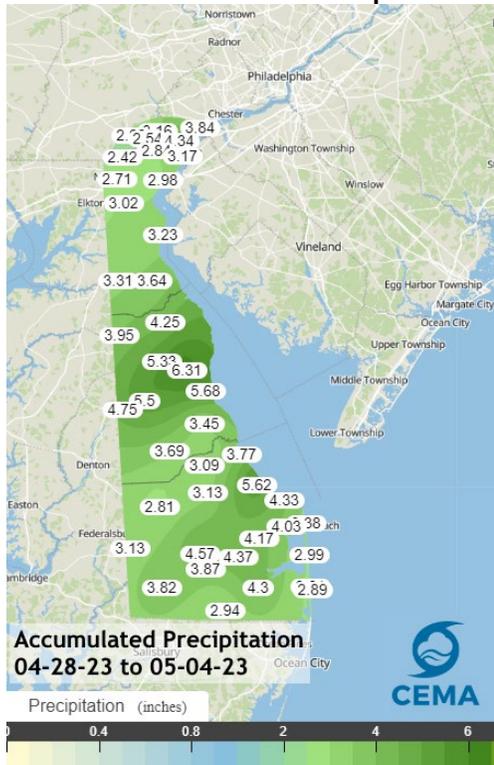
1 Week Accumulated Growing Degree Days



1 Month Accumulated Growing Degree Days



1 Week Accumulated Precipitation

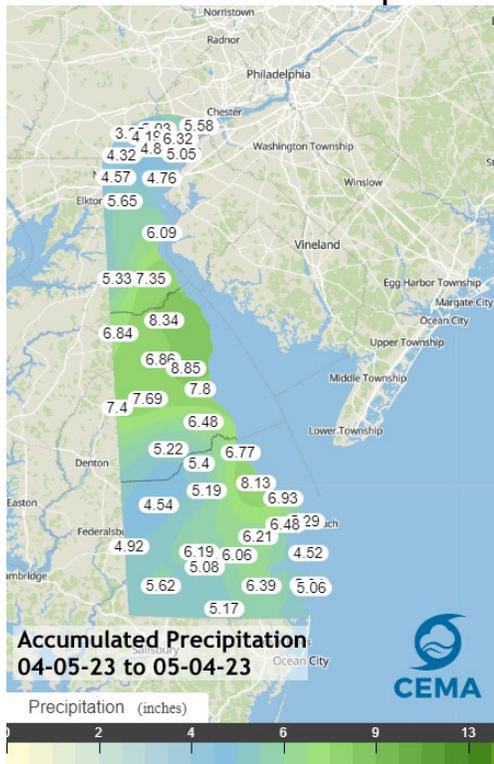


Weekly Crop Update is compiled and edited by Emmalea Ernest, Scientist - Vegetable Crops and Drew Harris - Kent Co. Ag Agent

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1 Month Accumulated Precipitation



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!