Vegetable Crops

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

Cucurbits
Continue scouting for spider mites in melons. We have seen an unusually active mite year. I suspect these are mites that started in transplant houses and were planted into fields. I am just now finding mites beginning to feed on lower leaves of pokeweed along wooded edges. Now that fruit is beginning to grow on the early planted watermelons, pay attention to rind worms. There are numerous species of Leps that will lay eggs and feed on leaves, some of which could cause injury to the developing fruit. We have a wide variety of good Lep products available. A couple of notes: Bt should not be mixed with Bravo. Neither should Agri-mek or Zeal be mixed with ‘sticky’ fungicides such as Bravo. While I have seen these tank mixtures do well recently, the combination can result in reduced efficacy.

In other cucurbits, squash bugs are very active. This week begin scouting for squash vine borer activity.

Sweet Corn
Vial Testing: We tested another 40 moths this week in treated vials. Survivorship is averaging 30% for this week. Do not rely on a pyrethroid by itself in a spray rotation.

Trapping: Moth pressure has dropped a little bit in pheromone but not in the blacklight. This is why we run both and use the most conservative of the two, in some sites this is the black light, while in others it is the pheromone. Curiously, the black light trap in Lewes has been catching extremely large numbers of moths this week. Monday and Thursday trap data is uploaded to our website: https://agdev.anr.udel.edu/trap/trap.php. For reference, action thresholds based off of blacklight and pheromone trap can be found here: https://www.udel.edu/academics/canr/cooperative-extension/sustainable-production/pest-management/insect-trapping/silk-stage-sweet-corn/. I apologize for an earlier post that had our previous web address, this is the correct link. Thursday’s trap capture is as follows:

<table>
<thead>
<tr>
<th>Trap Location</th>
<th>BLT - CEW</th>
<th>Pheromone CEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dover</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Harrington</td>
<td>2</td>
<td>112</td>
</tr>
<tr>
<td>Milford</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Rising Sun</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>Wyoming</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Bridgeville</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>Concord</td>
<td>2</td>
<td>62</td>
</tr>
<tr>
<td>Georgetown</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>Greenwood</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Laurel</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Seaford</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>Lewes</td>
<td>24</td>
<td>74</td>
</tr>
<tr>
<td>Harbeson</td>
<td>--</td>
<td>3</td>
</tr>
</tbody>
</table>
Heat Stress and Shading for Heat Stress Mitigation in Vegetables and Small Fruits - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu and Emmalea Ernest, Associate Scientist - Vegetable Crops; emmalea@udel.edu

Climate change has the potential to affect fruit and vegetable production as temperatures increase. Climate data from the region has shown a steady increase in average temperatures over the last 100 years with average night temperatures in summer months increasing the most. Record high temperatures have occurred throughout the past decade and many vegetable crops have had losses due to the heat. Providing adequate moisture through irrigation is critical in high heat periods. However, maintaining soil moisture cannot completely compensate for extreme heat.

Photosynthesis rapidly decreases at temperatures above 94°F, so high temperatures will limit yields in many vegetables and fruits. Plant stomates will close earlier in the day, thus limiting gas exchange and thereby photosynthesis. Respiration increases with temperature. While daytime temperatures can cause major heat related problems in plants, high night temperatures can also have great effects on vegetables, especially fruiting vegetables. Hot night temperatures (nights above 75 °F) will lead to greater cell respiration. This limits the amount of sugars and other storage products that can go into fruits and developing seeds. Because of this increased respiration the plant expends stored photosynthates and they do not contribute to yield.

High air temperatures may result in high leaf temperatures, especially where water is deficient. High leaf temperature result in heat damage to the proteins which allow the plant to photosynthesize and carry out metabolic processes. Very high leaf temperatures result in visible, physical damage to leaves in the form of sunburn and scorching. Sunscald of fruits will increase, especially where leaves wilt and reduce fruit cover.

In flowering and fruiting crops, high heat will affect pollen production, often reducing viable pollen numbers. Reproductive parts in plants (anthers, stigmas) may not form properly or function properly. If pollen is transferred to stigmas, pollen germination may be reduced or halted due to heat and desiccation. Reduced pollination can result in smaller fruit or misshapen fruit.

If pollination is successful, early fruit abortion may occur due to lack of photosynthates or heat damage. In heat stressed plants, the hormone balance is affected and there is an increase in abscisic acid that is involved in these abortions.

High soil temperatures can damage surface roots, limiting water and nutrient uptake, especially potassium. This is particularly an issue in crops grown on black plastic mulch, a common cultural practice. 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. 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 where not enough potassium reaches the fruit.

Shading for Heat Stress Mitigation

Artificial shading is a strategy that can be used to mitigate heat stress. Commonly, shade cloth or netting is used for this purpose. This netting comes in black, green, white, and reflective aluminum colors and is commonly used at the 20-30% shade levels. Shading is applied during the hottest periods or periods when the plant is most sensitive to heat (such as tomato fruit development). Research at the University of Maryland by Jerry Brust showed that shading tomatoes during fruiting can improve fruit quality and reduce culls. Research at the University of Georgia on peppers showed similar results with improvement in the number of marketable fruits. Kansas research showed that lettuce production was improved where white shade cloth was used.

University of Delaware research with shading of strawberries for summer production showed mixed effects with shading benefiting in some
years but not in others. In 2018 and 2019 University of Delaware vegetable researchers studied the effect of shade cloth on tomato and pepper marketable yield. Treatments were no shade, 30% black, 30% Aluminet, 30% red, 22% white, 40% white. In 2018 shade treatment did not have a significant effect on pepper quality or marketable yield. In contrast, in 2019 shade treatments, especially 30% black, shaded plots produced more marketable peppers than the unshaded plots. Yield of marketable first harvest (early Aug) for 30% black was 18x higher than unshaded. Yield of marketable second harvest (Sep) was 2x unshaded. Shade did not reduce internal white tissue in tomatoes to the point of achieving marketability in the 2018 or 2019 trial. Lettuce trials were conducted with no shade, 30% black, 30% Aluminet, 30% red, 30% blue, 22% white, and 40% white. Shade cloth reduced soil temperatures by 3 °C. Shaded lettuce treatments had reduced bitterness in both the 2018 and 2019 trials. For lettuce the combination of a heat tolerant variety with shade had the greatest effect on reducing bitterness.

To summarize, there is good evidence that 30% black shade cloth applied during the hottest time period (early June through early August) improves bell pepper yield and quality. There is also good evidence that shade cloth reduces bitterness in lettuce, especially when used with a heat tolerant variety. There is some evidence that 30% black shade cloth increases tomato quality.

Cucurbit Downy Mildew Forecast - Jake Jones, Extension Agriculture Agent, Kent County; jgjones@udel.edu

Cucurbit downy mildew epidemics are an annual occurrence in the Mid-Atlantic and Eastern US. The disease spreads northward from Florida up the Atlantic coast as weather patterns and, more importantly, host availability allow. A disease reporting and forecasting website at https://cdm.ipmpipe.org/ is a valuable resource for cucurbit growers and consultants. According to the website, southern Delaware and southern Maryland currently have a high risk of cucurbit downy mildew, which will continue through the weekend with the cloudy, rainy forecast. Cucurbit downy mildew first reports have historically occurred around the 4th of July but since 2015, have been trending earlier in Delaware and Maryland (Table 1). This is an expensive trend, since weekly preventative fungicides sprays are needed to manage the disease. Effective fungicides are listed in the Mid-Atlantic Commercial Vegetable Production Recommendations: https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/commercial-crops/vegetable-crops/midatlantic-vegetable-recommendations/.

Fungicide bioassays from the University of Maryland have shown Orondis, Zing, Bravo, Ranman, and Omega to be some of the most efficacious fungicides tested on cucumber seedlings (2016-2019). Fungicide rotation and the use of resistant varieties can help maintain the efficacy of fungicides and reduce cucurbit downy mildew severity.

Table 1: Cucurbit Downy Mildew First Reports in Maryland

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jul 8</td>
<td>Jun 29</td>
<td>Jun 23</td>
<td>Jun 15</td>
<td>Jun 26</td>
</tr>
</tbody>
</table>

All cucurbit crops are susceptible to cucurbit downy mildew with symptoms usually occurring first in cucumbers. In cucumber, early symptoms are angular, water soaked lesions delineated by the leaf veins (Figure 1). As the symptoms progress, they become chlorotic and necrotic, with signs of the disease apparent on the underside of the lesions where heavy sporulation can occur (Figure 2).
Experimental Robotic Platform to Automate Vegetable Production Tasks

Farmhand Automation is an early stage ag-tech startup based in Biddeford, Maine, that is building a small, accessible robotic platform for repeatable field tasks for small farms. They have been invited by the National Science Foundation (NSF) to apply for grant funding to accelerate their robotics development to help farmers during the COVID-19 crisis. This funding could help accelerate their robotics development and launch trials as early as six months.

As part of the program, they are conducting a research study to confirm they are on the right track and developing the right tools that small farms really need. They are looking for farms across the country with a few criteria: primary vegetable production, 1-100 acres in production, and 4+ employees. These are short, 15 minute calls with basic questions about operation practices, costs, and where farmers need the most help during and after the COVID-19 crisis.

Towards the end of this summer, there will be an opportunity for interested farms to sign up for trials for 2021 as well.

They really appreciate any support!

To learn more and sign up, head to: FarmhandAutomation.com.

Fruit Crops

Renovating Plasticulture Strawberries - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

With strawberry season winding down in our annual strawberry production on plastic mulch, many growers may consider carrying the beds over for a second year’s harvest. These are some guidelines for renovation of plasticulture strawberries:

1) Evaluate disease pressure. If the planting had significant anthracnose, botrytis crown rot, phytophthora, or identified viruses do not carry over the planting.

2) Evaluate plastic mulch and drip lines. Do not carry over beds with deteriorated mulch or plugged drip systems.

3) If relatively disease free, mow the tops with a rotary mower (in smaller plantings this can be done with a line trimmer or with hand clippers). You want to leave some leaves. Do not damage the crown.
4) Remove any runners that are left after mowing by hand. Make any plastic mulch repairs and drip system repairs as necessary. Treat and flush drip lines as necessary.

5) Remove all dead plant material around the crowns. This can be done by hand or with a leaf blower.

6) Evaluate crown thickness (number of crown plants). If over 5, crowns must be thinned out. This can be done by breaking of part of the crown by hand or by using an asparagus knife to cut away part of the crown. Leave a minimum of 3 crown plants.

7) Apply additional herbicides to row middles using a shielded sprayer to control weeds during the summer months. Hand weed holes during the summer if weeds emerge.

8) Maintain plant health by controlling diseases, insects, and mites throughout the summer months and irrigate regularly. A small amount of nitrogen fertilizer (20 lbs. N per acre) can be applied at this time if needed to maintain plant health. Take leaf tissue samples to evaluate plant nutritional status.

9) In late August or early September, apply 60-60-60 (N, P₂O₅, K₂O) through the drip system.

10) Replant any holes with missing plants by the middle of September.

Research has shown that with proper renovation and care, second year yields will be higher than the first year, but berry size will be smaller.

**Renovating Day Neutral Plantings**

Fall planted day neutral (repeat blooming) varieties such as Albion, Seascape, or San Andreas will often stop blooming in the heat of the summer. To extend bloom period, manage irrigation so plants have enough water (do not drop lower than 60% of field capacity) in the hot period and apply 5-7 lbs. of nitrogen per acre every week and add other nutrients as indicated by tissue testing. Remove any runners that form. If crowns are crowded, thin as described above.

If production has ceased in day neutral fields (flowering often stops in mid-July), then renovate as described above but fertilize to stimulate new growth in early August to fruit again in the fall.

---

**Cyclamen Mites Found in Strawberries**

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

This has been a ‘mitey’ spring so far with two spotted spider mites, broad mites and now cyclamen mites (by Bob Rouse) being found. Usually cyclamen mites (*Phytinemus pallidus*) cause much of their damage to bedding plants, but they can cause significant problems in strawberries too. 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. And unlike two spotted spider mites that prefer dry conditions, cyclamen mites thrive in humid conditions and is why they are primarily a greenhouse pest.

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 pincer-like (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 numbers 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 infestation.

Growers should watch for infested 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, which means detection early in the growing season when foliage is nominal. Thorough spray coverage of the crown leaves is important for good control, so high volumes of water are needed. Horticultural oils can be used if temperatures are below 88 °F. Agri-Mek SC or Portal XLO 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.

---

**Agronomic Crops**

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

**Soybean**
The usual defoliator complex is active now, including Japanese beetle. I found my first one in Laurel this week. Bean leaf beetle feeding is
evident, along with bean leaf roller folding leaves under. With recent cool, cloudy, and wet weather, be sure to check for possible stand loss from slug activity resurgence, particularly in high-residue cover cropped fields where no row cleaners or vertical or turbo tillage was done.

Corn
Now that small grains are being harvested, any stink bugs that have been developing on the grain are going to move elsewhere. Now is an excellent time to check edges of corn/wheat fields for stink bug. Stink bugs will often move to the edge of fields and stay there for a period of time before dispersing into the field interior. If an above threshold population is building up on the edge, a border spray may be all that is needed to protect the corn. Also scout pivot tracks, as the opening in the field acts like an insect highway.

Alfalfa
Continue scouting for potato leafhopper. Once yellowing is observed, damage has already been done. While scouting for leafhopper, note any blister beetles. If selling hay as horse feed, you may want to think about an insecticide before harvest to knock them down.

Scouting for Soybean Cyst Nematode - Alyssa Koehler, Extension Field Crops Pathologist; akoehler@udel.edu

Soybean Cyst Nematode consistently ranks as the most yield limiting pathogen of soybeans across the US, with average annual yield losses estimated over $1 billion dollars. SCN and other nematodes are often silent yield robbers, being present in the field without noticeable aboveground symptoms. If symptoms from SCN do occur, they can look similar to other production challenges, like nutrient deficiency, soil compaction, drought stress, or other diseases. SCN can inhibit Rhizobium nodule formation, causing chlorosis or yellowing of soybeans in affected areas of the field. Due to the lack of consistent or obvious aboveground symptoms, it is very common for SCN to go unknown until severe infestation develops (Figure 1).

Figure 1. Soybeans with healthy looking foliage, but high levels of SCN in the soil

Scouting soybean roots for SCN females in season and conducting fall soil samples are two ways to check your field for SCN. Yellow to white females can be found on roots from about six weeks after planting through the end of the season. While females on the roots confirm the presence of SCN, they do not provide information on the level of infestation. Soil samples are the best method to assess overall populations across the field. Soil sampling can be conducted at any time, but fall samples provide a good snapshot of end of season populations and can be collected when already out for routine fertility sampling. We will discuss the steps to collect soil samples for SCN in an August article. Today I will introduce the steps to scout for SCN females on roots:
When to Sample
Scouting for SCN females on roots can occur 6 weeks after planting up until 3-4 weeks before harvest. Digging plants earlier in the season is generally more effective because new roots surrounding the base of the plant are easier to dig and not as far down into the soil profile.

Where to Sample
When scouting a field that has never been checked for SCN, you can target any areas with yellowing or stunting, but it is also a good idea to include healthy looking plants since SCN can be present without any aboveground symptoms. Areas of the field that tend to be higher risk for SCN include: near a field entrance, areas that have been flooded, areas with pH greater than 7, areas where yield has historically been lower, areas where weed control is not as good.

How to Sample
Using a shovel, dig 6 to 8 inches from the base of the plant to try to remove as much of the root system as possible. (Avoid tugging or pulling on the plant since you will leave much of the root system behind in the soil.) Gently shake off the soil and check the root system for white to light-yellow lemon-shaped adult SCN females (Figure 2). SCN females are much smaller than the nitrogen-fixing nodules (Figure 3). A hand lens or magnifying glass can make looking for SCN females easier, especially when scouting in sandy soils where sand particles can resemble SCN females. Gently swirling roots in a bucket of water can help to remove soil particles without dislodging the females.

What to Do Next
If you find SCN females or suspect nematodes are present in the field, a soil test is the next step to estimate population density in the field. For many years, nematode populations were managed through a single source of resistance, PI88788. Over the past few decades, we have seen a break down in this resistance and nematodes are reproducing at far higher rates. When a resistant variety is providing effective control, there should only be 10 to 20 SCN females on the roots. When digging some of our SCN trial plots this week we had plants with 150+ SCN females. If high levels of SCN are present, rotation of crop and variety are the best steps to reduce populations. Corn and wheat are both non-host options. While the PI88788 resistance gene still accounts for over 95% of soybean acreage, there are new resistance genes coming out on the market. Seed treatments are another control option. We are currently screening multiple seed treatment products for efficacy in our region and will post those results as they become available later this year.

Figure 2. Soybean root system with SCN females indicated at arrows

Figure 3. Soybean root system with nodulation (left arrow) and SCN females (right arrow)
**Herbicide Injury on Corn** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

I have seen a lot of herbicide injury on corn this year, more so than the last few years. In the month of May we had a lot of cool weather and overcast days which slows the corn plants’ ability to metabolize the herbicide and increases the risk of crop injury. The average temperature during May in 2019 was 67 °F while in 2020 for the same month was 60 °F. As usual, most of the crops are starting to grow out of the injury.

So when troubleshooting possible herbicide injury and its severity, consider how weather could have impacted the problem.

---

**Treating Dicamba Soybeans with Postemergence Application** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu


Dicamba that was in the possession of commercial and private applicators as of June 3 can be sprayed through July 31. All precautions and restrictions on sensitive crops, temperature, wind speed and direction, and application equipment are still in place. As mid-June approaches, temperatures begin to increase, and this can increase the risk of off-target movement. Most of these products recommend additional precautions when temperatures exceed 91°F to compensate for evaporation.

If you had intended to use one of the formulations of dicamba impacted by this ruling, but did not have possession of the product, there are some available options.

**Palmer Amaranth:** Fomesafen-products (i.e. Reflex, Flexstar GT), acifluorfen (i.e. Ultra Blazer), or lactofen (Cobra) will provide control of emerged plants. Fomesafen will also provide residual control whereas acifluorfen or lactofen will not. Be aware the use of a residual herbicide with acifluorfen and lactofen can increase the severity of leaf burn; however, without the residual herbicide there is a good chance of later emerging plants.

**Common Ragweed:** It depends on which type of resistance you have in your field. From our testing, the most wide-spread resistance is glyphosate plus ALS-resistance, there are some fields resistant to glyphosate plus ALS-herbicides plus PPO-resistance. So if you were intending to use dicamba because of glyphosate-resistant common ragweed, then fomesafen, acifluorfen, or lactofen are the best options. Even if you know you have PPO-resistance, these products will burn off most of the common ragweed leaves and so you can set back the weeds and maybe the soybean canopy will help with outcompeting a number of these plants.

**Horseweed:** Most of our horseweed-plants are also resistant to FirstRate so chances are this is not a good choice. None of the other herbicides will control horseweed either. My suggestion is use glyphosate as part of your postemergence spray; glyphosate will stunt the horseweed and if there are good growing conditions the soybean canopy will help suppress the horseweed.

Regardless of the postemergence herbicide you intend to use, be sure to spray while weeds are small (3 inches or less) to achieve the highest level of control possible.

---

**General**

**Guess the Pest! Week 11 Answer:** Aphids - David Owens, Extension Entomologist, owensd@udel.edu

Congratulations to Buzz Lowe for correctly identifying last week’s pest as an aphid outbreak! Although a bit unusual to find this many early, it can happen, particularly in fields that have not been treated with a neonic and have been treated with pyrethroids. Aphids congregate on the new growth, resulting in a cupping or curling of the leaf. The other clue to their presence is the sticky honeydew sheen on the black plastic. I often look for that first to reveal an aphid infestation. Aphids are not limited to melons either. They can cause issues in peppers, leafy vegetables, other species can
attack tomato, and there is even one that goes after hemp. And of course, if you park a car under tulip poplar, you are well familiar with honeydew from tulip-tree aphid.

**Controlling Fall Panicum** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Fall panicum control was one of the most frequent discussions that I had last year. Again this year I am seeing a lot of fall panicum in fields ([https://weedid.cals.vt.edu/weedimg/197](https://weedid.cals.vt.edu/weedimg/197)). Fall panicum is a native summer annual grass weed. Control with s-metolachlor (Dual) and acetochlor (Harness) is relatively short and we start to see breaks after about three weeks. Pyroxasulfone (Zidua and Anthem products) provides better preemergence control.

Fall panicum is one of those species that is not as sensitive to glyphosate as other grasses. The Roundup PowerMax label says for effective control at 22 fl oz the maximum height of large crabgrass is 12 inches, giant foxtail is 20 inches, while fall panicum is 6 inches. Accent Q will provide good control in corn (including approved sweet corn hybrids). For broadleaf crops, consider including a postemergence grass herbicide such as Select (clethodim) or Poast (sethoxydim) to improve control.

It appears tankmixing some herbicides with glyphosate can reduce control. Last year we saw this when fall panicum was large (above 6 inches tall) and glyphosate was tank mixed with herbicides that caused leaf burn of the fall panicum (Liberty, Callisto, Reflex etc.). It appears the key to successful control is spraying while fall panicum plants are small and susceptible.

**Guess the Pest! Week 12** - David Owens, Extension Entomologist, owensd@udel.edu

Test your pest management knowledge by clicking on the guess the pest logo and submitting your best guess. This week, we jump back into corn, in part to do PSNT’s, look for stink bugs, and other things amiss, and we see plants like this. What is going on here?
FINPACK Financial Analysis - Laurie Wolinski, Extension Agent; lgw@udel.edu

What is FINPACK? A software package, developed by the University of Minnesota, that helps producers see an in-depth financial picture of their farm. With FINPACK farm families can easily consider the financial feasibility of potential production alternatives or farm expansion to make informed management decisions.

Laurie Wolinski of U of DE Extension has the software and is available to consult about creating a confidential file for your farm. The initial data input requires a time commitment, depending on how accessible the farm records are. Once all the data is entered, detailed reports are available to review and keep for your own decision making, to share with your family members or lender.

This is a busy time for production agriculture. Keep FINPACK in mind as you work the crops this season and consider potential alternatives. If you’d like to learn more or schedule a time to consult, please email Laurie Wolinski - Lgw@udel.edu.

Survey for Independent Poultry Producers Near Chester Co., PA

We are looking for feedback from the local poultry community involved in the production of local, organic, and/or pastured poultry in our region (areas near southeastern Pennsylvania) to establish if a USDA inspected poultry processing facility is needed for our area.

The potential processing plant in Oxford, PA (Chester County) will deal primarily in the processing of chickens from independent producers and farmers, but would potentially offer processing for ducks, turkeys, and other fowl. We would offer USDA inspected processing, which will eliminate processing-related restrictions on where and how the poultry products are sold. We will also be exploring the organics certification for processing, and religious exemptions such as halal and kosher.

In order to serve the farming community, we are asking current and potential poultry producers to inform us of your perceived needs through this survey.

The survey can be found at: https://forms.gle/BxuUKgfTbdmJN1Bh6

Announcements

Health Insurance Webinar Series

Money, health and health insurance are interrelated. Learning what options are open to you and how best to choose and use your health insurance in times of Covid-19, is the smart action to take. This upcoming free webinar series will be for you if you are confused about health insurance options and how to get the most of your insurance policies. Brought to you by your colleagues at University of Delaware and Maryland Extension. Registration can be found at: https://go.umd.edu/health_insurance.

June 30
Health Insurance for Farmers and Small Business Owners
Know your health insurance options as a farmer or small business owner. (5:00 to 6:00PM)

July 7  5:00-6:00 p.m.
Smart Choice Health Insurance Basics
Choosing the right health insurance plan makes you a smart consumer. Increase your understanding of health insurance and learn strategies for selecting a health insurance plan that will meet your
July 14  5:00-6:00 p.m.  
**Smart Use Smart Actions**  
Knowing how to use your health insurance will make you a smart health care consumer. Identify smart actions that will help you become a Smart User of health insurance. (5:00 to 6:00PM)

July 21  5:00-6:00 p.m.  
**Smart Use Understanding and Estimating Healthcare Costs**  
Taking control of your health care costs makes you a smart health care consumer. Better understand and estimate your health care expenses so you can plan for future health care costs. (5:00 to 6:00PM)

July 28  5:00-6:00 p.m.  
**Smart Use Managing Health Insurance and Resolving Conflicts**  
Do you know what to do if you are denied coverage for care? What if you think you were billed incorrectly? Learn how to manage the process for handling disputes with your health insurance company and how to avoid them. (5:00 to 6:00PM)

To register for any session, visit:  
[https://go.umd.edu/health_insurance](https://go.umd.edu/health_insurance)

For more information on the Health Insurance Literacy Initiative, visit [https://extension.umd.edu/insure](https://extension.umd.edu/insure)  
Category 1 CEUs available for Maryland and Delaware Social Workers

---

**Hey Hay! Selection and Matching Hay with Stock Needs**  
Wednesday, July 15, 2020  7:00-8:00 pm EST  
Online

With Susan Garey, Extension Agent Animal Science and  
Dan Severson, New Castle County Agriculture Agent-University of Delaware

What should you look for when selecting quality hay for animals? How do you match hay quality with animal needs? What are some decision making tools to help you when purchasing hay?

Registration is free but required to access the Zoom webinar.  
Registration link:  

---

**Multispecies Grazing- The How and Why for Soil and Animal Health**  
Wednesday, June 24, 2020  7:00-8:00 p.m. EST  
Online

With Susan Garey, Extension Agent Animal Science  
University of Delaware

Grazing multiple species both in terms of animals and plants offers many benefits to both animals and the soil. Learn about these benefits as well as considerations and helpful tips for implementing multi species grazing on your property.

Registration is free but required to access the Zoom webinar.  
Registration link:  
## Weather Summary

Carvel Research and Education Center Georgetown, DE

**Week of June 11 to June 17, 2020**

### Rainfall:
- 1.48 inch: June 11
- 0.01 inch: June 12
- 0.25 inch: June 17

### Air Temperature:
- Highs ranged from 85°F on June 12 to 66°F on June 17.
- Lows ranged from 70°F on June 11 to 56°F on June 14.

### Soil Temperature:
- 74.1°F average

Additional Delaware weather data is available at [http://www.deos.udel.edu/data/](http://www.deos.udel.edu/data/)

*Weekly Crop Update is compiled and edited by Emmalea Ernest, Associate Scientist - Vegetable Crops. Aisha Hoggard assists with web posting.*

University of Delaware Cooperative Extension in accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

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