WEEKLY CROP UPDATE
UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

Vegetable Insect Update – June 15, 2018

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Cucurbits

Squash bugs have recently become active in high tunnels, and eggs were found in watermelon this week. There are several effective products that can be used for squash bug. The broad-spectrum insecticides include neonics and pyrethroids. Neonics such as Belay, Scorpion, Venom, Assail, the group 4c insecticide sulfoxaflor (Closer) and the 4d insecticide Sivanto are also recommended for squash bug. Be mindful when using these products; all are toxic to bees. Assail and Sivanto are a little less harmful. The various products also have varying pre-harvest intervals, and rates change whether they are being applied through the drip, soil, or as a foliar application. Other products that have had efficacy in recent university tests include the 'reduced risk' insecticides flonicamid (Beleaf) and cyclaniprole (Harvanta), although squash bugs are not on the label.

Squash bugs prefer summer squash and pumpkin. At the end of the season, you can remove cucurbit plants and clean debris to reduce overwintering habitat. Zucchini is listed as the most susceptible type of squash. In the literature, Waltham butternut, acorn, and cushaw squash are less preferred, but I have seen large numbers build up on cushaw. Cushaws are also resistant to squash vine borer.

Helene Doughty and Tom Kuhar at Virginia Tech write in a review article (https://academic.oup.com/jipm/article/7/1/1/2658001) that wooden boards can be placed between squash rows. The bugs will hide under the boards and can be crushed easily by stepping on the board or by flipping it over and removing the insects.

Row covers can help, but because squash flowers need to be pollinated, the covers must be removed at flowering or the plants would need to be hand pollinated. Also, row covers might hurt the plants under hot humid conditions. Preliminary work in Virginia suggests that planting nasturtiums next to or in between squash rows can help repel bugs. The organic insecticides neem (azadirachtin) and pyrethrin may have efficacy on low to moderate populations.

According to degree day models, squash vine borers should be active state wide now.

Sweet Corn

As a reminder, our trapping data gets updated Mondays and Thursdays on the insect pest management Extension site, which can be accessed here: http://agdev.anr.udel.edu/trap/trap.php. We have recently seen a small bump in corn earworm activity as reported by the pheromone traps, but trap counts are declining statewide. This is normal. Historically, there is a small increase in earworm flight at the beginning of

June, tapering off by the 3rd week of June, and building again around the 2nd to 3rd week in July. After that, earworm activity remains pretty high through the end of the season. Historical graphs can also be found on the same site by clicking on a tab at the top of the page that says 'historical interactive graphs'.

Trap Location	BLT – CEW	Pheromone CEW	Corn Spray Schedule
Dover	1	1	6 day
Harrington	0	0	No spray
Milford	1	3	5 day
Rising Sun	1	11	4 day
Wyoming	1	0	No spray
Bridgeville	0	18	4 day
Concord	0	1	6 day
Georgetown	0	4	6 day
Greenwood	0	0	No spray
Laurel	1	15	4 day
Seaford	0	4	4-5 day

The spray schedule listed in the table is based off our sweet corn action thresholds which can be found here: http://extension.udel.edu/ag/insect-management/insect-trapping-program/action-thresholds-for-silk-stage-sweet-corn/.

Heat Necrosis in Transplants

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

Heat necrosis is a common problem on black plastic mulch in late spring and summer plantings in clear weather and at high temperatures. This is a common problem in later plantings of peppers and tomatoes grown in smaller cell sizes. Black plastic can heat up to well over 110°F on hot days in the late spring and summer. Vegetable transplants are exposed to these high soil temperatures at the soil line around the transplant hole. The stem tissue just at or above the level of the plastic may be killed at these high temperatures and the transplants will then collapse and die. Small transplants do not have the ability to dissipate heat around the stem as roots are not yet grown out into the soil and water uptake is limited. Another factor in heat necrosis is that there is little or no shading of the mulch with the leaves of small transplants.

Heat necrosis on pepper stem next from excessive temperatures from black plastic mulch.

There are a number of practices that can reduce heat necrosis in later planted vegetable transpants:

- Avoid using tender transplants that have not been hardened off.
- Use larger transplants with greater stem diameters and more leaves to shade.
- Make a larger planting hole, cutting or burning out the plastic.
- When transplanting into the plastic, make sure the stems of transplants do not touch the plastic once set.
- Water sufficiently in the hole to reduce heat load.
- Plant in the evening once the plastic has cooled down or in the very early morning. Avoid transplanting on very hot days or when extended hot, sunny weather is forecast.
- Switch to white or aluminized plastic mulch for later plantings. This will reduce the heat loading significantly.
- In smaller plantings you may paint the planting zone on the black plastic mulch white with latex

paint and then plant through this white strip once dry. Another option is to spray on white particle film at the plant base. You can also mulch around the planting holes with wet straw to reduce heat loading.

● Use overhead irrigation after planting to keep the plastic cooler.

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

With the recent heavy, leaching rains, we are seeing signs of sulfur deficiency in some vegetable crops. Sulfur is considered one of the secondary macronutrients that vegetable crops require for growth. Sulfur is a component of four amino acids and is therefore critical for protein formation. It is also a component of certain glycosides that give pungency to mustard family crops (greens, cole crops) and Allium crops (onions, garlic).

In the last 25 years, as industrial air pollution has been reduced (especially pollution from coal fired power plants) we have had less sulfur deposition from rainfall. Sulfur deficiencies are more common and sulfur additions in fertilizers or manures is being required for many crops to produce high yields.

Most of the sulfur in the upper part of the soil is held in organic matter. Upon mineralization, sulfur is found in the soil as the sulfate ion ($SO4^{2-}$) which has two negative charges. The sulfate ion is subject to leaching, especially in sandy textured soils (loamy sands, sandy loams). It does accumulate in the subsoil but may not be available for shallow rooted vegetables.

Sulfur can be added by using sulfate containing fertilizers such as ammonium sulfate, potassium sulfate, and K-mag (sulfate of potassium and magnesium). It is also a component of gypsum (calcium sulfate). In liquid solutions, ammonium thiosulfate is often used as the sulfur source. Sulfur is also found in manures and composts. For example, broiler litter has about 12-15 lbs of sulfur per ton.

In vegetable crops, sulfur removal is generally in the 10-20 lb/A range. Mustard family crops (cole crops such as cabbage and broccoli, mustard and turnip greens, radishes) remove between 30 and 40 lbs/A of sulfur. Research in our region has shown response to added sulfur for sweet corn and for watermelons. In Florida research it was shown that adding 25 pounds of sulfur per acre boosted yields by 1.7 tons per acre in tomatoes. Similar results were found with strawberries.

Our general recommendations are to apply 20-30 lbs of sulfur per acre on sandy soils for most vegetable crops. Remember to take credit for any sulfur being added with fertilizer sources such as ammonium sulfate (24% sulfur).

One vegetable where we want to limit sulfur is with sweet onions. Because sulfur increases onion pungency, and sweet onions are sold based on their low pungency, we limit sulfur applications to this crop.

Alert! Cucurbit Downy Mildew in Dorchester Co. – *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland*; keverts@umd.edu

Downy mildew on processing cucumber was found on Thursday, June 13, 2018 in Dorchester County, MD. This is one of the earliest occurrences of downy mildew in Maryland. Protect cucumber crops with products that are specific for downy mildew. Among the specific fungicides for this disease are Orondis Ultra or Ranman, which should be mixed with a protectant fungicide. Many additional fungicides are registered for downy mildew and are listed in the Commercial Recommendation Guide. Remember to rotate products in different FRAC groups and to apply preventative fungicides, which are more effective than "rescue treatments".

At this time, only cucumber (both processing and fresh-market) should be affected. The strains that infect other cucurbits have not been observed in our region.

Vegetable Disease Update – June 15, 2018

– *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland*; keverts@umd.edu

Tomato Late Blight

Tomato transplants were found at a garden center in northeast Pennsylvania last Friday (June 8) that were infected with late blight. We don't know the origin of these transplants, and I understand that none were sold. However, the occurrence warrants extra vigilance of any tomato plantings to scout for late blight. Jerry Brust wrote a good article on recognizing the symptoms, which was published in last week's WCU.

Cucurbit Powdery Mildew

Please read labels carefully as some of the fungicides mentioned in this article are not labelled on all cucurbits.

In planning your spray programs for powdery mildew on cucurbits, remember that many products that are labeled for this disease, are not effective because of the existence of fungicide resistance. The powdery mildew pathogen *Podosphaera xanthii*, is highly prone to the development of resistance and has lost sensitivity (become resistant) to some recently registered fungicides. To manage powdery mildew, begin with good cultural practices – especially the use of resistant cultivars. In a spray program, alternate targeted fungicides in different FRAC groups, apply fungicides at manufacturer's recommended rate (don't cut the rate), tank-mix with a fungicide with different mode-of-action (or use combination product), and don't apply at-risk fungicides if powdery mildew sporulation covers more than 20% of the leaf surfaces.

Currently the following targeted fungicides are NOT effective for managing powdery mildew (resistance in pathogen population is high): Topsin M (FRAC 1, Benzimidazole), and Cabrio, Quadris, and others (FRAC 11, QoI fungicides).

Resistance exists, but the following fungicides may be used judiciously, to a limited extent, in a rotational program: Rally, Procure, Folicur, (FRAC 3, DMI fungicides); Pristine (FRAC 7 + 11), Fontelis, Xemium, Aprovia (FRAC 7, SDHI fungicides). Luna is also a FRAC 7 fungicide, however it isn't cross resistant with the other FRAC 7 group.

Fungicides that still have good efficacy in our area in the past two years are: Quintec (FRAC 13) and Vivando (FRAC U8). Luna Experience and Quintec alternated with Procure are alternations that I have tested and performed well. Unfortunately, resistance to Torino (FRAC U6) has now been documented in the eastern U.S. and it hasn't performed well in my trials.

Watch for Aphids in Melons – *Jerry Brust, IPM Vegetable Specialist, University of Maryland*; jbrust@umd.edu

Several reports lately of very deformed watermelon plants, but also of cucumber and cantaloupe plants. These distortions (Fig. 1) are being caused by melon aphids *Aphis gossypii* Glover in most cases. Melon aphids are small and range in color from a light/dark green mottle (Fig. 2), which is most common to whitish, yellow (seen during hot, dry weather), pale green, and dark green almost black forms. The legs are pale with just the tips of some parts black. The cornicles also are black. One trait of melon aphids that make them particularly difficult to manage is that unlike other aphids, their populations do not fade with higher summer temperatures. Immatures look like adults, only smaller.

Female melon aphids give live birth to clones of themselves during spring and summer and their populations can increase very rapidly especially when hidden on the underside of foliage. One of the things to look for to see if you have an actively growing aphid population is white cast skins of the aphids. Aphids must shed their skins to grow so lots of skins show that the aphids are actively growing (Fig. 2, orange arrows). The faster they grow the faster they become adults and can begin to reproduce. The reproductive period lasts about two weeks with a female producing 65-85 offspring in that time. The ideal temperature for reproduction is around 70-80°F., which are the temperatures we are experiencing now. There is evidence that there are host races, i.e., melon aphids reared on

cotton can be transferred successfully to okra but not to cucurbits. This inability to transfer from one host to another has been shown for other crop combinations.

Melon aphids feed on the underside of leaves and can be a major problem on young plants when they feed near the tips of vines, sucking sap and nutrients from the plant. Their feeding causes a great deal of distortion and leaf curling, hindering the photosynthetic capacity of the plant (Fig. 1). The foliage may become chlorotic and die prematurely. They also secrete a great deal of honeydew which allows the growth of sooty mold and further reduces the photosynthetic ability of the infested plant. One of the other major problems with melon aphids (as with other aphid species) is that they are good at transmitting potyviruses such as cucumber mosaic virus, watermelon mosaic viruses, and zucchini yellow mosaic virus. It must be noted that these viruses are transmitted despite insecticide applications, which include oil sprays. This is mostly because the aphids can transmit these nonpersistent viruses within 15 seconds of reaching the plant.

Figure 1. Watermelon plant with heavy melon aphid population

Management

No thresholds have been established for melon aphid in cucurbits. Reflective mulches laid before planting can repel aphids from plants reducing or delaying virus transmission, until vine growth covers-up the plastic. In smaller fields, row covers can be used. Biological control can have a significant impact on aphid populations and is our first line a defense. Therefore, weekly sprays of insecticides should not be used in watermelon unless really needed. Because cantaloupe and cucumber are very susceptible to bacterial wilt disease, which is vectored by striped cucumber beetles several insecticide sprays may be necessary. However, resistance by melon aphids to organophosphates and pyrethroid insecticides is common. Using neonicotinoids for beetle control will help control aphids, but the neonics should not be sprayed exclusively and pyrethroids or other insecticide classes should be used intermittently for beetle control.

Figure 2. Melon aphids on underside of leaf

While many of the above suggestions are all good to prevent aphid problems what do you do once you have them? Organically there are not many good aphid control tactics to use once they show up. Applications of rosemary oil or insecticidal soaps or horticultural oils are options. These will have to be applied several times with thorough coverage of the foliage being critical for control of the pest. Rosemary oil will disrupt beneficial

populations less so than soaps or oils. There are several synthetic controls that will work if thorough coverage is obtained. These chemical controls include: methomyl, dimethoate, acetamiprid, clothianidin, thiamethoxam, pymetrozine, flonicamid and combination products that include one of these. Be sure to read the label before applying any chemicals. It should be noted that a plant damaged as severely as the one in Figure 1 will not recover to produce a crop.

Fruit Crops

Venom Approved for BMSB in Some Fruit – *David Owens, Extension Entomologist,* owensd@udel.edu and *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

A Section 18 label for Venom (dinotefuran) has been approved for use on Delaware stone and pome fruits for brown marmorated stink bug management. This chemical has lower risk to beneficial insects. Maximum size of fruit orchard treated with Venom is 415 acres. There is a 12 hour REI, 3 day PHI.

Agronomic Crops

Agronomic Insect Update – June 15, 2018 – *David Owens, Extension Entomologist,* owensd@udel.edu and *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

Soybean

We continue to see bean leaf beetle, grasshopper nymphs, and bean leaf rollers in soybean fields. This week we started picking up early instar green cloverworm. All of these insects contribute to the defoliator guild, and by themselves rarely cause problems. Very high densities of green cloverworm, several per row foot, are necessary to significantly defoliate soybean. Some entomologists consider them almost beneficial because they provide a good food source for predatory insects.

A couple of really early soybean fields are starting to flower, and green stink bugs are starting to move in in very low numbers. Recently, VA and NC raised thresholds to 5 bugs per 15 sweeps once beans hit R4. It is unlikely that these early fields will develop large enough stink bug populations. Green stink bug populations peak in late summer/early fall. We are also beginning to see spider mites moving into soybean fields. Small hotspots can be found in a few fields. Look underneath leaves for stippling and for sand that is sticking to the leaf, caught in the spider mite webbing.

Field Corn

We discussed management concerns of stink bugs in field corn in an article in last week's WCU. There are two other points worth mentioning. First, wheat is a favored host for brown stink bugs to produce their first generation. Sweeping wheat adjacent to your corn may give you an idea of the potential stink bug threat to the corn once wheat is harvested. The second is that, at least in southern states, the most common species in corn is the brown stink bug which shows up on the edges first. If you sample routinely along the edge 50 feet of a field and do not see any stink bugs, it is less likely that they will be present in the field interior.

Wheat field adjacent to field corn; a scenario which has the potential for brown stink bug invasion into the corn.

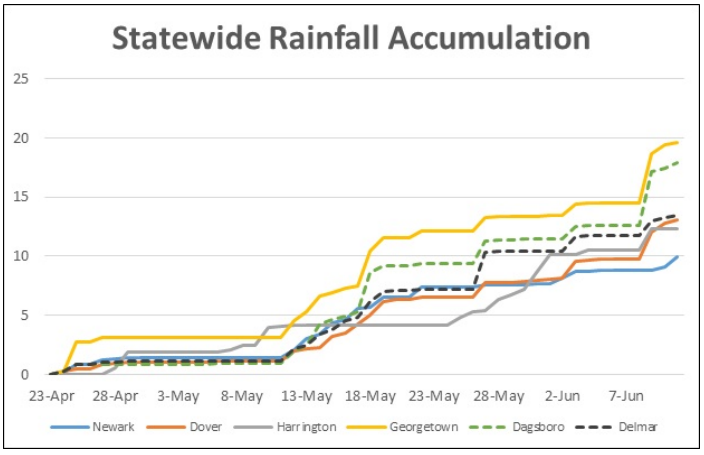
Rainfall and GDD Update Through June 12 - *Jarrod O. Miller, Extension Agronomist,* jarrod@udel.edu

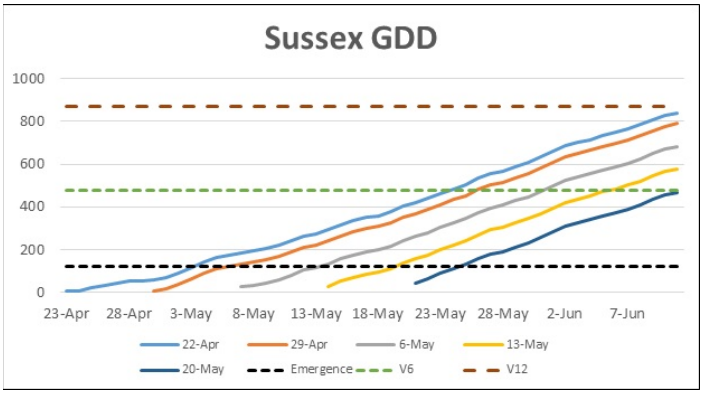
Since the first weekend of corn planting, Delaware has accumulated between 10-20 inches of rainfall. The region around Newark has fared the best with only 10 inches of accumulation, and longer periods without rain. Variable storms cells around the state seem to prefer to pass over Seaford to Georgetown on their way to the beach, creating difficulties in planting as well as sidedressing and other applications. This is a good year to talk to your neighbor to find out their field conditions and figure out if anything they did works.

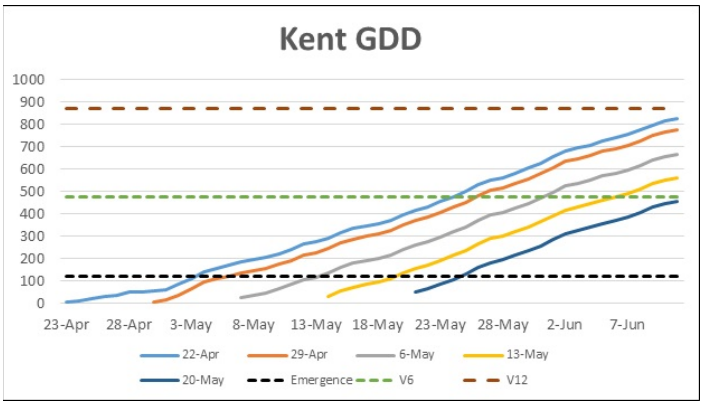
Growing degree days have continued to accumulate, besides an inflection of cooler weather around June 2. Corn planted on April 22nd is should be getting close to V12 (870 GDD), while anything planted the week of May 20th could be close to V6. Be sure to scout your fields, count leaves, and determine which stage you may be in.

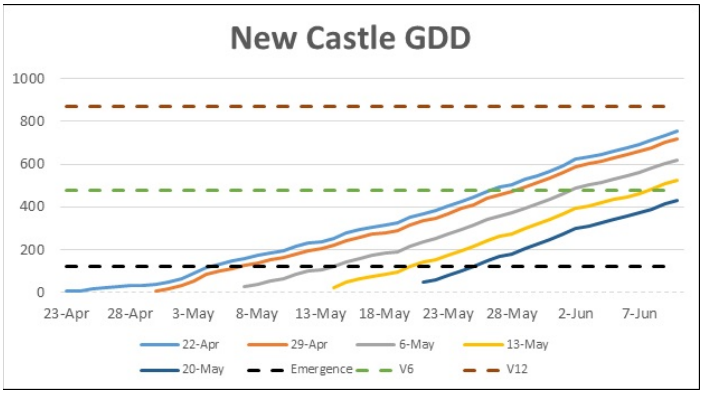
Table 1: Growing degree days accumulated through June 12th from the beginning of each week.

	Sussex	Kent	New Castle
22-Apr	841	824	764
29-Apr	789	777	730
6-May	681	667	632
13-May	577	561	535
20-May	465	455	441
27-May	307	296	293









What is Denitrification and Why You Should Care - *Jarrod O. Miller, Extension Agronomist,* jarrod@udel.edu and *Amy Shober, Extension Specialist – Nutrient Management and Environmental Quality, University of Delaware,* ashober@udel.edu

Nitrogen (N) is a complex element that can undergo many transformations in the environment. The most likely form of N found in soils is nitrate (NO_3^-), which can be lost from the root zone by leaching or through denitrification. When soils are saturated with water for more than 48 hours, microbes can transform nitrate into gases, allowing them to escape to the

atmosphere. Many studies have observed denitrification increasing when water filled pore space is above 60%. With heavy rainfall across the state, soils are definitely under those conditions. Dense or heavier textured soils are at an increased risk for denitrification.

Denitrification will only occur if microbes have access to a food source in the form of soil organic matter, crop residues, or manure. Since organic matter content typically decreases as you go deeper into the soil profile, the chance for denitrification also drops with depth. Some researchers have observed maximum denitrification within the upper 2-8 inches of the soil. So keep in mind that adding N fertilizers to soils that are already saturated may cause gaseous N losses. In contrast, waiting for the upper few inches of soils to dry out reduces the chances that you will lose applied N through denitrification.

The USDA-NRCS has some guidelines for determining soil moisture in the field by hand, including photos for different soil textures. However, if you squeeze your soil into a ball and water comes out it is too wet to do anything, let alone apply fertilizer.

Dicamba-Resistant Soybeans

– *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu

A number of fields have been planted with Xtend soybeans, but not necessarily with the intention of spraying dicamba. However, with the weather and all, some folks might consider using dicamba. Remember, only labeled formulations of dicamba can be applied to Xtend soybeans. Anyone who applies these products must have undergone training. If you have undergone training, be sure you go through the checklists to be sure you can meet all the criteria required for application. Application timing is from sunrise to sunset and do not apply if the wind is very still (this could indicate a temperature inversion). Apply if wind speed is between 3 and 10 mph. Do not apply the wind is blowing towards a susceptible crop. Maintain at least 110-foot buffer, and boom height cannot exceed 24 inches above crop canopy. MOREOVER, there are more restrictions, so refresh your training before you decide to spray.

The new formulations of dicamba were developed to reduce volatility, but the issue of volatility has not been eliminated. We know high temperatures can cause these products to volatilize. We saw volatility with these products when they were applied to wheat stubble and air temperatures were 95°F.

With more research and experience with these dicamba formulations, we will have a better understanding of off-target movement and can provide better guidance on their use in this region. However, until that time be cautious about their use. If you are considering use of dicamba be sure to read and follow the label, be sure the applicator has received the proper training, follow the guidelines, and most importantly use common sense. Do not just consider "can I spray it" but also give serious thought to "should I spray it".

Considerations for Controlling Weeds in Drowned Out Crops

– *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu

An area of the field where the crop has drowned out gives weeds an opportunity to grow without crop competition, and potentially produce a tremendous amount of weed seeds. If a particularly troublesome species such as Texas panicum or Palmer amaranth is growing in these spots they could really cause problems for the next few years if they are allowed to produce seeds. So, what should you do? Some options to consider are whether you can reach these spots with equipment such as mower or sprayers; what crop is in the field; what you intend to plant in the field after harvest; and what will effectively control or kill the weeds?

Mowing is an option, but in all likelihood the areas will need to be mowed multiple times to prevent seed production.

If considering a herbicide, first assess the situation. If you are treating areas of a field, and will be harvesting the crop around the bare areas, you are limited to herbicide options for the crop planted in the field. Furthermore, you

are limited to the same herbicide rates and herbicide application timings. Using herbicides with residual control is going to be important because you will not have a crop canopy present for later emerging weeds.

Also, consider what will be planted in the field next and check your rotational intervals. Will you have enough time between herbicide application and planting the next crop? This is a situation where you will have to assess each field individually, but these drowned out areas may need special attention.

Tankmixing Reflex (fomesafen) with Glyphosate (reprinted) – *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu

There have been many situations where both fomesafen (active ingredient in Reflex) and glyphosate will complement each other for weed control. Syngenta has a premix of fomesafen plus glyphosate called Flexstar GT. Also, Reflex and glyphosate can be tankmixed, but there have been some situations of these two products may not mix well. The following is an article from Ken Smith from University of Arkansas entitled "**Problem Solving Incompatible Tankmixes of Glyphosate and Reflex®"**

Some growers have experienced cottage cheese spray mixtures when Reflex® and glyphosate were tankmixed in an effort to burn down existing weeds while applying Reflex® prior to cotton or soybean planting.

It seems that the potassium salts of glyphosate (WeatherMax, Touchdown, PowerMax etc.) are not very compatible with Reflex® . . . Many of the generic glyphosate formulations are isopropyl or diammonium salts (not potassium salts) and will mix fine. A quick check of the label will give the salt used in the formulation.

If . . . Reflex® and the potassium salt of glyphosate is mixed and found to be incompatible, it can likely be brought back into solution by adding household ammonia. Start with 1% ammonia and begin agitation. More ammonia may be added if needed.

General

Irrigation Scheduling Tool Available For Delaware Farmers – *Kevin Brinson, Associate State Climatologist and DEOS Director*; kbrinson@udel.edu

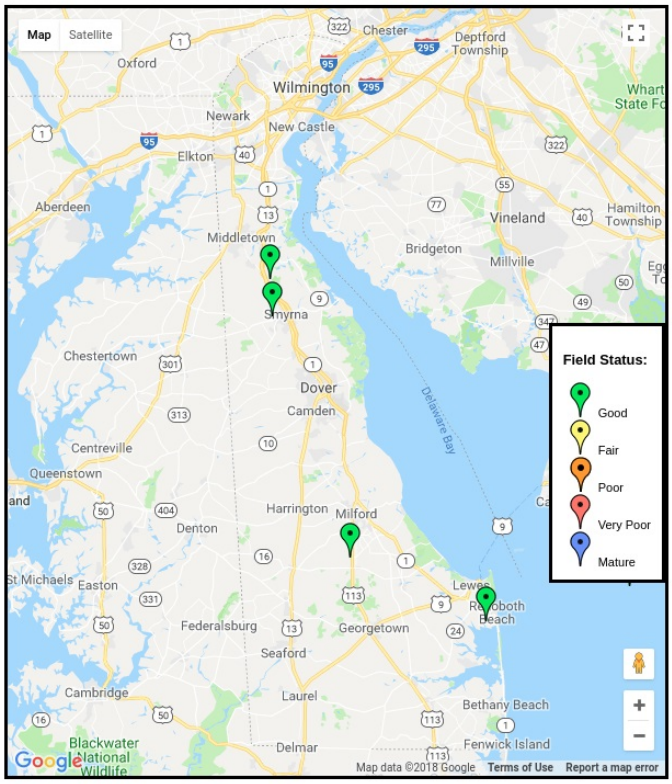
Since 2011, the Delaware Irrigation Management System (DIMS) has been available to Delaware farmers to help manage their daily irrigation scheduling needs for a number of different crops, including: corn, soybean, cantaloupes, sweet peas, lima beans, watermelons, sweet corn, cucumbers, and tomatoes. Using input from UD Extension staff, as well as several growers and consultants, DIMS is designed to be easy to use and require as little information about the field as possible to get started. To create a field, a user only needs to provide a field name, crop type, emergence date, and location using either the tool's map or by entering the latitude and longitude of the field. From there, the system handles of all the daily calculations of soil water content required to maintain adequate soil moisture for crops.

DIMS eliminates the need to input daily weather data or look up soil information in order to run an irrigation scheduler. Using daily weather data from the nearest Delaware Environmental Observing System (www.deos.udel.edu) weather stations, DIMS calculates daily reference evapotranspiration and rainfall for each field. For soil information, DIMS automatically determines the dominant soil texture using USDA soils data, however, users can adjust their soil type if they know their soil has more or less water holding capacity than what is automatically chosen for the field. The only other data needed is the amount of daily irrigation applied to each field, which is provided by the user after each irrigation application. The system also allows advanced settings to be tweaked or changed, such as growing season length, crop stage dates, soil, and crop water management requirements.

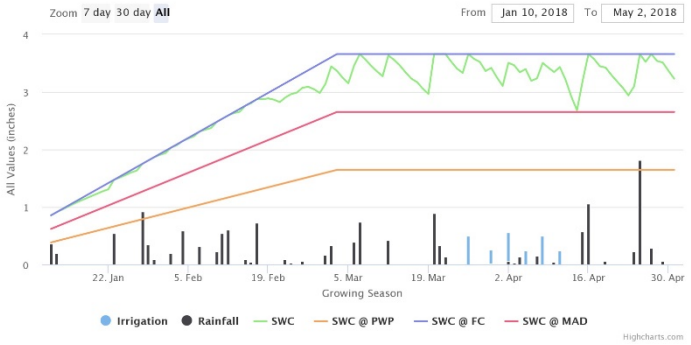
DIMS was originally funded by USDA NRCS to provide a Delaware specific, "ET-based" irrigation management tool in support of NRCS' Environmental Quality Incentives Program (EQIP). Thus, crop water demand and irrigation

data from DIMS can be printed or exported into a program like Microsoft Excel for each field to satisfy this element of EQIP's reporting requirements for anyone participating in that program.

For more information about DIMS, go to http://dims.deos.udel.edu. If you're interested in using DIMS, send an e-mail to me at kbrinson@udel.edu with DIMS somewhere in the subject line. From there, I'll send an e-mail containing login information as well as a few instructions on how to get started. The system is free to use and our center (the Center for Environmental Monitoring and Analysis – www.cema.udel.edu) will provide any help necessary to get new users and their farm fields up and running in the system.



DIMS Field Status Map. Markers color depicts status of soil moisture conditions in each field.



DIMS Field Status Chart. Displays growing season crop soil water content relative to field capacity, permanent wilting point, and managed allowable depletion level. The chart also displays rainfall and irrigation events.

Guess the Pest! Week #11 Answer: Thrips Injury on Soybean

- *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

Congratulations to Travis Kinnison for correctly identifying the damage in the photo as thrips injury and for being selected to be entered into the end of season raffle for $100 not once but five times. Everyone else who guessed correctly will also have their name entered into the raffle. Click on the Guess the Pest logo to participate in this week's Guess the Pest challenge!

Guess the Pest Week #11 Answer: Thrips Injury on Soybean

Thrips are small bodied insects that use piercing-sucking mouthparts to feed on plants. The damage in the photo is of thrips feeding injury on soybean. The threshold for thrips is 8 per leaflet and leaf damage. However, we rarely

reach populations high enough that the physical feeding injury warrants treatment. In fact, thrips are most known for their ability to vector plant diseases such as soybean vein necrosis disease (SVNd).

Adult Soybean Thrips

There are at least three species of thrips, including soybean thrips, which are capable of vectoring SVNd. From 2015-2017, we conducted a state-wide survey for SVNd, sampling 88 fields for thrips and disease symptoms. Our findings determined that the disease is prevalent in Delaware. We detected SVNd in 11.6% of the full season and 22.8% of the double crop soybean fields included in the survey averaged across all three years.

Here is a link for more information about the SVNd survey results,:
https://cdn.extension.udel.edu/wp-content/uploads/2015/10/30120518/SVND-grower-summary-and-report.pdf

Soybean Vein Necrosis disease (SVNd) Symptoms.

Here is a link to a short Youtube Video Discussing SVNd symptoms**:**
https://youtu.be/7gXDLjm5x7Q

Fun Entomology Fact: Thrips is the proper terminology used whether it is singular and plural. So you can have one thrips or many thrips.

Guess the Pest! Week #12 – *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

Test your pest management knowledge by clicking on the GUESS THE PEST logo and submitting your best guess. For the 2018 season, we will have an "end of season" raffle for a $100.00 gift card. Each week, one lucky winner will also be selected for a prize and have their name entered not once but five times into the end of season raffle.

This week, one lucky participant will also win A Farmer's Guide To Corn Diseases ($29.95 value).

You can't win if you don't play!

What is this insect?

Announcements

2018 Delaware Cooperative Extension Horticulture Short Courses

Register for this course online.

Pest and Beneficial Insect Walk
$15, 2 Pest., 1 CNP, 2 ISA credits
Wednesday, June 20, 4-6 pm
University of Delaware Botanic Gardens
531 S College Avenue, Newark, *Meet at the entrance to Fischer Greenhouse.*
Learn to identify insect and disease pests, as well as beneficial insects in the landscape at either the Sussex County Extension Office or the University of Delaware Botanic Gardens. **Instructors:** Nancy Gregory, Brian Kunkel, Carrie Murphy, and Tracy Wootten

2018 UD Weed Science Field Day

Wednesday, June 20, 2018 8:30 a.m.
University of Delaware
Carvel Research and Education Center
16483 County Seat Hwy, Georgetown, DE

The UD Weed Science Field Day will begin with **registration at 8:30** at the Grove near the farm buildings and new office building on the north side of the road. We will start to view the plots at 8:45 am.

The weather has been a challenge to get plots planted. All of our corn studies will be part of the tour, which includes most of the commercially available herbicides. Some of corn trials include different approaches and timings of herbicide application. Most of our soybean trials were recently planted, but we will view various burndown trials for full-season no-till production. We will also talk about the various cover crop trials. Our trials with Xtend soybeans, Liberty Link, and Enlist soybeans will not be at a stage to view until later this summer.

Coffee, juices, and donuts will be provided. We will also provide sandwiches for lunch.

Pesticide credits and Certified Crop Advisor continuation credits will also be available.

Dr. Michael Flessner, VA Tech, will hold a field day on Tuesday, June 19th at Blackstone, VA

Dwight Lingenfelter, Penn State, will hold a field day on Thursday, June 21st at Landisville, PA

2018 Farmers' Field Day At LESREC

Wednesday, June 27, 2018 9:00 a.m.-1:00 p.m.
University of Maryland
Lower Eastern Shore Research & Education Center (LESREC)
27664 Nanticoke Road, Salisbury, MD 21801

Calling all Farmers/Growers to Your Field Day at LESREC

Topics
• IR-4 Program
• Nutrient Management & Soil Health
• Ag Law and Conserve (Possible Nutrient Mgmt. Credits)
• Plant Pathology Information
• Variety Studies
• Weed Management
• Poultry Information
• Diagnostic Information
• Bee / Pollen Research
• Wagon Tours

Lunch will be provided

REGISTER AT: https://2018-farmers-field-day-at-lesrec.eventbrite.com

More Information to Follow. Check out Events at https://extension.umd.edu/lesrec

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Blueberry Experimental Plot Tour

Tuesday, June 26, 2018 6:00-8:00 p.m.
University of Delaware
Carvel Research & Education Center
16483 County Seat Highway
Georgetown, DE 19947

This meeting will highlight variety testing and other research with blueberries.

This is the last season that we will be maintaining and collecting data from the blueberry experimental planting at the research farm. **Come see and taste the 25 varieties in the variety trial!**

Tour the blueberry variety trial, fertilization and soil amendment experiments.

The meeting will conclude with an ice cream and berry treat.

Please pre-register by June 25 by contacting Karen Adams at (302) 856-7303 or adams@udel.edu.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of June 7 to June 13, 2018

Readings Taken from Midnight to Midnight

Rainfall:

4.20 inch: June 9
0.79 inch: June 10
0.16 inch: June 11
0.03 inch: June 13

Air Temperature:

Highs ranged from 83°F on June 9 to 66°F on June 11.

Lows ranged from 66°F on June 10 to 54°F on June 12

Soil Temperature:

70.2°F average

Additional Delaware weather data is available at http://www.deos.udel.edu/monthly_retrieval.html and http://www.rec.udel.edu/TopLevel/Weather.htm

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