

Volume 24, Issue 13

June 17, 2016

Vegetable Crops

<u>Vegetable Crop Insect Management</u> - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Brown Marmorated Stink Bug

Although populations were lower the previous two springs due to colder overwintering conditions, it appears that populations could be higher this season. Although trap catches in Delaware are not as high as they were during outbreak years, this year we are seeing a more consistent number in our light traps and pheromone traps located on small vegetable farms compared to 2014 and 2015. A new guidance document titled Integrated Pest Management for Brown Marmorated Stink Bug in Vegetable Crops authored by the BMSB SCRI CAP Vegetable Crop Commodity Team, has been posted to the stopbmsb.org website. It provides a summary of what researchers have learned so far and management recommendations using an integrated approach.

http://www.stopbmsb.org/stopBMSB/assets/File /BMSB-in-Vegetables-English.pdf

Cucumbers

Although populations of cucumber beetles vary from field to field, higher populations are present in fields with a history of problems. Fresh market cucumbers are susceptible to bacterial wilt that is vectored by the beetles, so treatments should be applied before beetles feed extensively on cotyledons and the first true leaves. Although pickling cucumbers have a tolerance to wilt, a treatment may still be needed for machine-harvested pickling cucumbers when 5% of plants are infested with beetles and/or plants are showing fresh feeding injury. A treatment should be applied for aphids if 10 to 20 percent of the plants are infested with aphids with 5 or more aphids per leaf.

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. When fields are blooming, be sure to consider pollinators when making an insecticide application as well as read all labels for pollinator protection statements and restrictions. This past week, we started to see an increase in spider mite populations in the earliest planted fields. The threshold for mites is 20-30% infested crowns with 1-2 mites per leaf. Acramite, Agri-Mek, Oberon, Portal and Zeal are miticides labeled on melons for mite control. Be sure to read all labels carefully for rates and restrictions since some are restricted to only one application as well as ground application only.

Peppers

As soon as the first flowers can be found, be sure to consider a corn borer treatment. Depending on local corn borer trap catches, sprays should be applied on a 7 to 10-day schedule once pepper fruit is $\frac{1}{4} - \frac{1}{2}$ inch in diameter. Be sure to check local moth catches in your area by calling the Crop Pest Hotline, (302) 831-8851, or visiting our website at

http://agdev.anr.udel.edu/trap/trap.php .

Potatoes

Continue to scout fields for Colorado potato beetle (CPB) and leafhoppers. Adult CPB as well as the small and large larvae can now be found. A treatment should be considered for adults when you find 25 beetles per 50 plants and defoliation has reached the 10% level. Once larvae are detected, the threshold is 4 small larvae per plant or 1.5 large larvae per plant. As a general guideline, controls should be applied for leafhoppers if you find ½ to one adult per sweep and/or one nymph per every 10 leaves.

Snap Beans

Continue to sample all seedling stage fields for leafhopper and thrips activity. The thrips threshold is 5-6 per leaflet and the leafhopper threshold is 5 per sweep. If both insects are present, the threshold for each should be reduced by one third. As a general guideline, once corn borer catches reach 2 per night, fresh market and processing snap beans in the bud to pin stages should be sprayed for corn borer. Sprays will be needed at the bud and pin stages on processing beans. After the pin spray on processing beans, the spray schedule will be determined by a combination of moth catches for corn borer and corn earworm and field scouting. http://extension.udel.edu/ag/insectmanagement/insect-trapping-program/ecb-andcew-moth-catch-thresholds-for-processing-snapbeans/

Sweet Corn

Continue to sample seedling stage fields for cutworms and flea beetles. You should also sample whorl through pre-tassel stage corn for corn borers and corn earworms. A treatment should be applied if 15% of the plants are infested with larvae. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible. Be sure to check both black light and pheromone trap catches since the spray schedules can quickly change. Trap catches are generally updated on Tuesday and Friday mornings on our website. You can also call the Crop Pest Hotline for the most recent trap catches: (302) 831-8851

http://agdev.anr.udel.edu/trap/trap.php

<u>http://extension.udel.edu/ag/insect-</u> <u>management/insect-trapping-program/action-</u> thresholds-for-silk-stage-sweet-corn/.

http://agdev.anr.udel.edu/trap/trap.php

<u>Potato Late Blight Update #11: June 16, 2016</u> - Nathan Kleczewski, Extension Specialist - Plant Pathology; <u>nkleczew@udel.edu</u>

Green row: April 29th, 2016

If you notice symptoms of black leg, please contact me or the Plant diagnostic clinic to have the disease confirmed.

	Townsend		Camden		Leipsic		Kenton	
Date	DSV	Total	DSV	Total	DSV	Total	DSV	Total
		DSV		DSV		DSV		DSV
5/5-5/9	3	6	0	11	2	12	0	13
5/9-5/12	3	9	6	17	2	14	4	17
5/12-5/18	2	11	0	17	3	17	0	17
5/18-5/22	2	13	2	19	2	19	2	19
5/22-5/26	2	15	0	19	2	21	2	21
5/26-5/30	5	20	5	24	5	26	5	26
5/30-6/2	2	22	4	28	5	31	3	29
6/2-6/6	6	28	4	32	5	36	5	34
6/6-6/9	0	28	0	32	0	36	0	34
6/9-6/16	0	28	0	32	0	36	0	34

Notes: Season severity of **18 severity values** indicates the need for the first fungicide application. An accumulated severity of 7 after fungicide application identifies the need for a subsequent fungicide application.

You can personalize your late blight forecasts for specific fields, sign up for email or text alerts, and enter in management information at <u>http://blight.eas.cornell.edu/blight/</u>. Real time fungicide application timing tables for locations within Delaware can be accessed at <u>http://blight.eas.cornell.edu/blight/DE</u>

See the <u>2016 Commercial Vegetable Production Recommendations-Delaware</u> for recommended fungicides.

Any suspect samples can be sent to the Plant Diagnostic Clinic or dropped off at your local extension office. Dr. Nathan Kleczewski can also be contacted at nkleczew@udel.edu or 302-300-6962.

The website USABlight tracks tomato and potato late blight across the nation and can be found here: <u>http://usablight.org/</u>. Information on scouting, symptomology, and management can also be found on this website.

<u>Windstorm Losses</u> - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Windstorms across the state last week caused significant damage to vegetable crops. Signs of this damage included torn leaves, dessicated (wind burnt) leaves and stems, broken or lodged stems and sandblasted and sand-cut plants. Most affected were young seedlings and newly transplanted crops where windbreaks were not used.

Vegetable growers have seen a large advantage to windbreaks this year, especially when used between every row. Plantings with extensive windbreaks have much less direct wind damage to plants than fields with windbreaks only in drive rows or without windbreaks. Planning for effective windbreaks starts in summer with identifying fields for next year's crops and planting small grains early enough in the fall to get a good stand and put on growth earlier in the spring. Rye is still the preferred windbreak because it is taller and comes to full height earlier in the spring. Barley and winter oats make much less effective windbreaks due to their shorter stature; they have been bred for shorter height to reduce lodging. Wheat and triticale are intermediate in height but reach full height later than rye. Spring oats could be used to protect plantings from sandblasting but will be less effective as a wind break for early crops because full height is not reached until late May. Sandblasting can be also be prevented by having a cover between plastic beds such as ryegrass

While earliness is not a concern for summer plantings, wind protection still may be. Crops for summer windbreaks include sudangrass, forage sorghums, sorghum/sudangrass crosses, pearl millet, foxtail millet, Japanese millet, and sunhemp.



Sorghum-Sudangrass as a summer windbreak

Fruit Crops

Fruit Crop Insect Management - Joanne

Whalen, Extension IPM Specialist; jwhalen@udel.edu

Brown Marmorated Stink Bug

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http://www.stopbmsb.org/where-is-bmsb/cropby-crop/orchard-crops/

Spotted Wing Drosophila (SWD)

We continue to find low levels of SWD adults in traps throughout the state. With the warmer winter conditions, this insect pest is being found earlier in many states. Be sure to consider this pest when making treatment decisions in small fruit, grapes and stone fruit. Growers of SWD hosts (blueberries, blackberries, raspberries, strawberries, and cherries) should begin preventative treatment when fruit becomes susceptible, that is, when fruit starts to change color.

For more information on monitoring, identification and control of this insect pest be sure to check the following links:

https://entomology.ces.ncsu.edu/2016/06/prev enting-and-managing-spotted-wing-drosophilainfestation/

http://www.northeastipm.org/aboutus/publications/ipm-insights/spotted-wingdrosophila-in-the-northeast//. http://www.ipm.msu.edu/invasive_species/spot ted_wing_drosophila/factsheets

<u>Potato Leafhoppers on Hops</u> – Jerry Brust, IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu</u>

I usually do not get the chance to look at many hop fields, as only a few farms have them, but they are becoming a bit more common in the last 10 years (Fig. 1). Visiting two farms with hops I saw marginal leaf damage (Fig. 2) on some leaves (found some thrips there) and then marginal leaf scorch on others (Fig. 3). When looking on the underside of the leaf-scorched leaves, I found many potato leafhopper, *Empoasca fabae*, nymphs (no adults) (Fig. 4) on one farm and only a few on the other.



Figures 1 & 2. Hops vine and hops leaf with the start of hopper/thrips damage

Potato leafhoppers prefer warm, dry conditions and are commonplace in southern states where they overwinter; leafhoppers do not overwinter in our area. Potato leafhoppers (PLH) move into our area via storm systems from the south. PLH are generally seen in late April or early May, but are arriving on average in our area 7-10 days earlier than just 20-30 years ago. Females lay 2-4 eggs per day in the leaf stems or veins of hops. In 7 to 10 days nymphs emerge. Nymphs undergo five instars and reach maturity in about 2 weeks. The newly emerged nymph is nearly colorless with red spots that fade. Nymphs then become yellow, finally changing to pale green in the third and later instars. There are 3-4 generations each summer. Leafhoppers are capable of very rapid population increases so scouting is important to control the pest to avoid damage to hops. Alfalfa and a few other forage legumes are the primary hosts for the potato leafhopper and once the first cutting of the forage is done, PLH will move into other susceptible crops such as potato and hops.

Damage: The most obvious symptom of potato leafhopper feeding is hopper burn. Hopper burn is the yellowing of the leaf margin (Fig. 3). This damage is followed by leaf curling and necrosis. Hopper burn occurs because potato leafhoppers feed by sucking the juices out of leaf veins and blocking the veins with a toxin in their saliva.



Figure 3. Leaves with severe hopper burn.

Monitoring and Management: Because potato leafhoppers can have very rapid population surges, it is important to scout and control them before major damage can occur. While there is no agreed upon threshold for leafhoppers in hops, most recommendations have a threshold at 2-3 PLH per leaf. Fields should be scouted weekly by checking the undersides of 5-10 leaves per 10-20 plants. If the average number of leafhoppers per leaf is at or above the threshold, then a control is needed. Because hops are a newer crop in our area states may differ in what they allow to be used, so be sure to check the label to see what your state will allow to be applied to hops for PLH control. In general, neonicotinoids, pyrethroids, or spinosyns could be used. Organic growers could use spinosad or

pyrethrins that are OMRI approved for potato leafhopper management. If PLH are more of a consistent problem for you one suggestion is to plant red clover in drive rows (do not mow) as potato leafhoppers prefer to feed on the red clover than hops.



Figure 4. Potato leafhopper nymphs on hop leaf

Agronomic Crops

Agronomic Crop Insect Management -

Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Alfalfa

Continue to sample for potato leafhoppers on a weekly basis. As temperatures increase you will see an increase in populations. Once plants are yellow, yield loss has already occurred. The treatment thresholds are 20 per 100 sweeps on alfalfa 3 inches or less in height, 50 per 100 sweeps in 4-6 inch tall alfalfa and 100 per 100 sweeps in 7-11 inch tall alfalfa.

Field Corn

We continue to find a few fields with cereal leaf beetle (CLB) adult feeding. Beetle adults can be found moving out of untreated small grains and feeding on the edge of corn fields. Although we do not have any firm thresholds for this insect on corn, as a general guideline controls may be needed if you find an average of 10 beetles per plant and 50% of the plants exhibit feeding damage. In the Midwest, it has been reported that the adult beetle is a vector of maize chlorotic mottle virus (MCMV) that causes corn lethal necrosis disease. Thresholds for beetle feeding would be much lower if this disease is an issue. We have not seen this virus in Delaware corn fields; however, please let us know if you suspect a problem.

As stink bugs move from weeds and wheat into corn, you will want to start sampling corn for this insect pest. Please see the most recent report on stink bug sampling and treatment timing in field corn form North Carolina

https://entomology.ces.ncsu.edu/2016/06/stink -bugs-moving-into-corn/

Soybeans

Be sure to sample the earliest planted fields for bean leaf beetles, potato leafhoppers, thrips, grasshoppers, green cloverworm and spider mites. Grasshoppers are present, especially in no-till fields. As barley and wheat are harvested and soybeans are planted, these fields will be susceptible to attack and grasshopper feeding can often cause stand loss. If stand reductions are occurring from plant emergence to the second trifoliate, a treatment should be applied. Although no precise thresholds are available, a treatment may be needed if you find one grasshopper per sweep and 30% defoliation from plant emergence through the pre-bloom stage. Numerous products are labeled for grasshopper control in soybeans. Be sure to check all labels carefully before combining insecticides and herbicides since there are a number of restrictions, including cautions on phytotoxicity.

Pythium in Corn - Nathan Kleczewski, Extension Specialist - Plant Pathology; nkleczew@udel.edu

We have seen several cases of pre- and postemergent damping off in corn caused by *Pythium* in recent weeks. Mild to moderately infected seedlings often are stunted and grow more slowly than healthy seedlings in the same field. The mesocotyls of infected seedlings (**Figure 1**)

are often rotted (Figure 2) instead of being healthy, firm, and white in color. The mesocotyl serves as a pipeline to the developing seedling, helping to move essential carbon and resources from the endosperm to the developing plant tissues. Severely infected seedlings may die before or after emerging from the soil. In some cases, the entire root system can be infected and appear yellow to brown. Often the outer tissues of the roots easily slough off and are water-soaked. Affected seedlings tend to occur in areas of the field that hold more water, such as low lying areas, turn rows, and other compacted areas of the field. Seedlings can survive mild to moderate Pythium infections if the root systems have developed adequately.



Figure 1. The mesocotyl of a corn plant, which can be rotted when damping off organisms infect corn seedlings. The mesocotyl acts like a straw, helping traffic carbon from the seed endosperm to the developing plant.

Pythium overwinters for many years, in the absence of corn, as oospores. Wet, cool conditions allow for the oospores to germinate and eventually produce small spores with the capacity to swim in soil water (zoospores). Root

exudates (amino acids, carbohydrates, secondary metabolites) attract the motile zoospores to seedling roots, and under the appropriate conditions, infection may occur. Damaged seed also exudes compounds that can attract zoospores, and wounding to the seed coat provides a route of entry for the fungus. Different Pythium species can infect corn at different temperatures. The key factor for Pythium is excessive water - when soil is saturated with water for an extended period of time, regardless of the temperature, you may see Pythium associated damping off in fields where the pathogen is present. A final thing to keep in mind is that there are Pythium that are saprophytic, meaning that they live on dead or decaying material. Therefore, if you have seedlings that are dying from some other factor (anoxia, chemical damage, insect damage) you could still find Pythium on the plants. Many times, multiple factors are involved in seedling rots and damping off.



Figure 2. Corn seedlings with rotted mesocotyls

The potential exists for development of *Pythium* in early-planted corn when wet weather conditions persist and corn does not germinate and grow quickly. Seed treatments with oomycete specific ingredients may provide some protection for 10 to 14 days after planting. Other control measures should be aimed at improving seedling emergence. In particular, avoid planting too early when soils are wet and cold, especially in no-till or conservation-tillage fields because heavy crop residues retain additional moisture.

General

<u>Considerations for Controlling Weeds in</u> <u>Drowned Out Crops</u> - Mark VanGessel, Extension Weed Specialist; <u>mjv@udel.edu</u>

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 things to consider are whether you can reach these spots with equipment such as mower or sprayers; what is the crop in the field; what do 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 at 10 to 14 day intervals 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. Use of a herbicide with residual control is going to be important.

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.

Don't Get Behind on Scouting for Weeds -

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

Be sure to scout your planted fields to determine if and when a postemergence treatment is necessary. Under good conditions, postemergence treatments are typically needed four to five weeks after the preemergence herbicides were applied. That is based on when the herbicides were applied, not when the crop was planted. Also, if reduced herbicide rates were used or the herbicide did not get activated, this time frame maybe less than four weeks. Also, if are relying on someone else to spray your fields, they may not be able to get to your fields right away, so be sure to budget time for the sprayers to respond (and with the spring we have been having the sprayers are probably behind). This is extremely critical if you have Palmer amaranth in your fields. Plan ahead, because if you let the weeds get too tall, you may not have any backup options.

<u>Cover Crops - A Soil Health Strategy to</u> <u>Prepare for Climate Change</u> - Jennifer Volk, Extension Environmental Quality and Management Specialist; jennvolk@udel.edu

Did you know that you might already be employing strategies to help your operation prepare for climate change? Turns out that some of the same best management practices that have been utilized for decades for their benefits to the environment are also excellent tools to help combat and prepare for a changing climate.

It is pretty well known that cover crops are one of the best agricultural practices for improving water quality due to their ability to reduce nitrogen running off and leaching from agricultural fields. Depending on the varieties and mixtures used, cover crops can also suppress weed and insect pests. But, it is their ability to improve soil health that makes cover crops an excellent tool in the adaptation tool box for climate change.

One of the greatest benefits of cover crops is their ability to improve soil tilth. The root systems of cover crops, legumes especially, promote beneficial fungi (mycorrhizae) and other microorganisms in soil. These fungi and microorganisms help bind soil aggregates and well-aggregated soils allow for more water infiltration and retention and ultimately increase a soil's capacity for plant available water. This is important given that we are anticipating hotter annual average and summer temperatures, warmer nights, and more hot, dry days in the future - all of which will likely lead to an increase in water demand by crops. Cover crops can help improve soil moisture conditions which could provide protection to crops during the hot dry conditions to come.

Cover crops also decrease risks of erosion through several pathways. First, the plants themselves hold the soil in place but the cover they provide also protects the soil from wind and raindrops. Additionally, since cover crops contribute to better aggregation of soils, the particles are more closely bound together and less susceptible to erosive forces. And, because more water can filter through well-aggregated soils, less water runs off, reducing the potential for soil to move with it. These are important benefits as climate projections indicate that precipitation will be more intense in the future and intense rains have a higher probability of eroding soils.

Finally, cover crops are often reported to increase soil carbon due to the stable organic matter left behind by woody and fibrous grains, grasses, and non-legumes. But, other agronomic practices could counteract this benefit, especially tillage. Conventional tillage not only breaks up the soil aggregates that improve soil tilth, but it also creates more soil surface area for microorganisms to decompose organic matter ultimately decreasing soil carbon. So, best results for soil health come when you utilize cover crops and minimal tillage systems together.

Because cover crops can help build soil carbon, they can in effect sequester carbon from the atmosphere, offsetting a portion of the carbon being emitted to the atmosphere which is causing climate change in the first place. A recent Natural Resource Defense Council Report, "Climate-Ready Soil: How cover crops can make farms more resilient to extreme weather risks," (https://www.nrdc.org/sites/default/files/clima te-ready-soil-IB.pdf) reports that if cover crops are used on half of the corn and soybean acres in the top 10 agricultural states, more than 19 million metric tons of carbon will be captured by those soils each year and that is equivalent to taking four million cars off of the road.

Granted, it takes a long time to increase the organic content of soil, so there are no false claims that cover crops will produce changes overnight. Rather, using cover crops can be thought of as a long-term strategy to protect and improve your soil health - which works in the context of climate change since that too is a long term process. The healthier your soil, the more prepared your operation will be to deal with changing climate conditions. So, why not start using cover crops today to help prepare your soil for the future!

Sign up for cover crop cost share at the Kent and Sussex County Conservation Districts began June 13th and runs through August 5th. The New Castle Conservation District will begin accepting applications for cover crops on Monday, August 1st and will accept them through August 31st or until funds are no longer available. Call your local district to learn more:

New Castle County, call 302-832-3100, extension 3

Kent County, call 302-741-2600, extension 3

Sussex County, call 302-856-3990 extension 3

In addition to their standard cover crop cost share program, the Sussex Conservation District offers two additional programs. One is their air seeder program which allows you to utilize their air seeder to plant your cover crop into your standing cash crop. They are also taking applications for an NRCS Regional Conservation Partnership Project that will give participants farming in the Chesapeake Bay watershed a \$25 per acre bonus when they plant cereal rye or a cereal rye mix.

Announcements

Free Webinars in June, Sponsored by the Mid-Atlantic Women in Agriculture

6/22: Snap It, then App It - With digital and smart phone photography, everyone can be a photographer! And a good one at that! This webinar will review the leading photography apps available. Learn how to correct mistakes and make an ordinary snapshot a work of art suitable for your family or business.

To register:

http://www.eventbrite.com/e/wednesday-webinarsregistration-11452674257

Webinars begin at noon EST. Duration is approximately 1 hour. For optimal performance we suggest using Internet Explorer as your web browser and connecting via Ethernet connection instead of wireless (wireless will work, but a hard line is more stable)

See website for more information and other upcoming topics: <u>https://extension.umd.edu/womeninag/webinars</u>

If you do not have access to high speed internet and would like to participate in one of the above webinars, contact Tracy Wootten at <u>wootten@udel.edu</u>.

2016 Horticulture Short Courses

For the complete list of 2016 courses go to: <u>http://extension.udel.edu/lawngarden/commercial-horticulture/2016-horticulture-short-courses/</u>

Pest and Beneficial Insect Walks

June 22 4:00 -6:00 p.m. University of Delaware Botanic Gardens 531 S College Avenue, Newark, DE (Meet at the entrance to Fischer Greenhouse.) Register with Carrie Murphy (302) 831-2506 or cjmurphy@udel.edu.

Cost: \$15

Credits: 2 Pest., 2 ISA, 1 CNP

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, Tracy Wootten, and Megan Pleasanton

Plant Identification - Herbaceous Plants

June, 29 4:30 – 5:30 p.m. University of Delaware Botanic Gardens 531 S College Avenue, Newark, DE

Cost: \$15

Credits: 1 Pest., 1 CNP

Learn to identify some of the great herbaceous plants used in the landscape. We will cover the common disease and insect pests of each and strategies for incorporating into the landscape. Meet at UDBG Herbaceous Garden. Instructors: Valann Budischak and Sue Barton

Register with Carrie Murphy (302) 831-2506 or cjmurphy@udel.edu.

Landscape Weed Walk

July 7 4:00-5:30 p.m. University of Delaware Botanic Gardens 531 S College Avenue, Newark

Cost: \$15

Credits: 1 Pest., 1 CNP

Learn to identify several common landscape weeds found in turf and flower beds during the spring. We will also discuss management. Meet at the entrance to Fischer Greenhouse. Instructors: Brian Kunkel and Susan Barton

Register with Carrie Murphy (302) 831-2506 or cjmurphy@udel.edu.

Disease and Insect Identification Workshop

July 13, 4-6 pm Townsend Hall, 531 S College Avenue, Newark, Room 012 Townsend Hall

Cost: \$15

Credits: 2 Pest., 2 ISA,1 CNP

Learn what signs and symptoms the Extension Specialists use to identify pests and diseases! Tips and techniques will be shared. Fresh and preserved specimens will be available to look at using hand lenses and microscopes. Instructors: Nancy Gregory and Brian Kunkel

Register with Carrie Murphy (302) 831-2506 or cjmurphy@udel.edu.

2016 UD Weed Science Field Day

Wednesday, June 29 8:30 a.m. University of Delaware Carvel Research and Education Center Route 9 (16483 County Seat Highway), Georgetown, DE

The 2016 Weed Science Field Day will be held **Wednesday**, **June 29** at the University of Delaware Research and Education Center, Route 9 (16483 County Seat Highway), Georgetown, DE.

The day will begin with **registration beginning 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. 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. Charlie Cahoon, VA Tech, will hold a field day on Tuesday, June 28^{th} at the Painter Research Facility

Dr. Burkhard Schulz, Univ of MD, will hold a field day on Thursday, June 30th.

Beginning Farmer Workshop Series: Irrigation Basics

Monday, June 27, 2016 6:00 – 8:30 p.m. University of Delaware Carvel Research and Education Center, Thurman Adams Research Farm 16483 County Seat Highway, Georgetown, DE *Meet at the Picnic Grove*

As part of the University of Delaware Beginning Farmer Workshop series a workshop on irrigation basics will be held on Monday, June 27. James Adkins, agricultural engineer with the University of Delaware Cooperative Extension will lead the workshop.

Topics and activities will include:

Types of Irrigation – drip, hand move pipe, travelling gun, pivot

Tour the farm to see various types demonstrated

Flow and pressure requirements for each.

Setup Labor and economics discussion

Well/Pumps – pros and cons of centrifugal vs submersibles for use with each type of irrigation.

Crop water demands vs application demands

Water needs, timing, application method versus evaporation and disease.

Drip System Design

Pressure regulators, filters

Tape emitter sizes and spacing, flowrate, length of run

Trunk line design and layout, valving

Connection and hookup

Management, run times, pulsing, automatic controls

Fertigation

Injectors - pumps, siphons etc,

Calibration

Products and timing

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of June 9 to June 15, 2016

Readings Taken from Midnight to Midnight

Rainfall:

No rainfall recorded

Air Temperature:

Highs ranged from 93°F on June 12 to 78°F on June 13 and June 15.

Lows ranged from 69°F on June 12 to 51°F on June 9.

Soil Temperature:

75.8°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

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