

Volume 26, Issue 4

Vegetable Crops

<u>Strip-Till, Biological Strip-Till and No-Till</u> <u>Systems Using Cover Crops for Seedless</u> <u>Watermelon Production</u> - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Strip-Till, Biological Strip Till, and No-Till Systems Using Cover Crops for Seedless Watermelon Production

Seedless watermelons are the most important fresh market vegetable crop on the Delmarva Peninsula with over 5,000 acres grown annually on over 150 farms

Considerable production costs are incurred to grow seedless watermelons including transplants, plastic mulch, drip tape, irrigation (pumping), fertilizers, and pest control. Over 95% of seedless watermelons are grown on black plastic mulch in a tillage and input intensive system.

Current systems require several tillage operations prior to laying plastic. Heavy tillage reduces organic matter levels in the soil by increasing decomposition rates, destroys soil structure, and negatively affects soil health. Compacted areas between beds allow water to accumulate and can increase disease pressure in wet years as evident with the high amounts of Phytophthora fruit rot in watermelon fields on Delmarva in 2017. April 20, 2018

Plastic mulch use adds extra cost to production, requires addition labor and time to apply, requires hand labor and machine use for removal, and must be disposed of in landfills. Degradable mulches are available and do offer another option for watermelons, however there is a high up-front cost in their use.

In a standard production system, over 130 lbs. of nitrogen are applied using inorganic nitrogen sources, another input cost (manufactured from fossil fuels), There are a minimum of 4 trips across the field with tillage and plastic laying equipment with associated fuel cost.

There is increased interest in no-till and strip till systems using killed cover crops for seedless watermelon production for later season plantings (late May and June) to reduce costs, reduce the risk of Phytophthora fruit rots, and maintain soil health. Another option is to transplant into barley stubble after harvest in June. These systems will not produce early watermelons but can improve the economics of later plantings.

No-till production of transplanted vegetable crops has been researched and demonstrated onfarm over the last two decades and no-till systems have been shown to be as productive as plasticulture based systems.

Research by Johnson and Taylor in Delaware in the 1990s showed the potential for no-till transplanting vegetable crops into rye cover, using a rolling corn stalk chopper to roll kill the rye (newer systems use a chevroned roller/crimper specifically designed to roll kill cover crops). Vegetables successfully grown with this method included pumpkins, cantaloupes, watermelon, tomatoes, and peppers. Additional studies looked at cover crop systems and no-till transplanting of vegetables into hairy vetch, crimson clover, hairy vetch-rye-crimson clover mix, and subterranean clover cover crops. This research showed that crops of squash could be grown with no additional nitrogen in killed legume covers.



Chevron bladed roller crimper for rolling cover crop prior to transplanting.

The University of Delaware conducted additional research evaluating no-till and biological strip till methods for seedless watermelon production. The goal was to reduce input costs while maintaining productivity, eliminate plastic mulch in production, maintain or improve soil organic matter and soil health, provide a portion of nitrogen fertilizer biologically, decrease fruit rots and other diseases, and decrease machine and labor costs.

Use of forage radish in a biological strip till system (winter killed forage radish strips with rye in between) was demonstrated for seedless watermelon and cantaloupe production at the University of Delaware in 2013. Additional research was conducted at the University of Delaware in 2014 with biological strip till using rye, hairy vetch, crimson clover and mixed systems with winter killed forage radish strips.

Biological Strip Till Systems in 2015

A one-acre plot was dedicated to this study. Cover crops were planted in early September 2014 for the 2015 study. A biological strip till system uses a one row strip of forage radish surrounded by the cover crop on either side. This is accomplished by blocking or dedicating seed meters in a drill. A diagram is shown below:

(C = Cover Crop. R = Forage Radish)

Cover crop combinations are given in the treatments below. The forage radish winter killed and deteriorated, leaving a strip with holes (the biological strip till). Cover crops were rolled using a roller crimper after rye headed but before anthesis and when full biomass was achieved with legumes. Additionally, nonselective and pre-emergence herbicides were applied after rolling. Seedless watermelons and pollinizer plants were set by hand. It has been shown that transplants can be set directly in the hole left by the forage radish that winter kills. Drip irrigation was used in both the plasticulture and biological strip till systems.

Treatments with the single row of tillage radish in the middle and cover crops on either side included:

- 1) Roll killed rye
- 2) Roll killed vetch
- 3) Roll killed crimson clover
- 4) Killed subterranean clover
- 5) Roll killed rye-vetch
- 6) Roll killed rye-crimson clover
- 7) Black plastic mulch (control)



Results indicate that biological strip till systems, when planted later in the season, can be a

viable alternative to plasticulture systems. The best cover/radish combination for weed management was the rye/crimson clover mix.



Yield of seedless watermelons in a biological strip till system by variety and cover crop, Georgetown, DE 2015

Tillage Based Strip Till

Tillage based strip till systems can also being used to grow seedless watemelons. In this system strips are tilled using a strip tillage implement with coulters or with mini rotavators. Transplants are set with a transplanter designed to go through some trash or that punches holes in the ground for the transplant.



Strip-till Implement

No-till for Seedless Watermelons

No-tilling into rolled cover crop or into barley stubble can also be successful with seedless watermelons. The key to success with this system is to have soils in good condition that will allow a no-till transplanter to function properly (cut a slot and then close around the transplant). To make this function, soils need to have a sufficient moisture level at transplanting.

All Systems

In each of these systems, addition of a legume cover crop such as hairy vetch or crimson clover can provide a portion of the nitrogen to grow the watermelon crop (credit 60-90 lbs of N/acre). Thick cover crop stands producing high amounts of biomass will serve as a mulch for weed control and will also serve to keep fruit off the ground, limiting fruit diseases. Good transplant to soil contact at planting is essential and equipment must be set up correctly to achieve this. Additional fertilizers can be applied before or at planting and can be sidedressed.

Strip-till and no-till production systems are adapted to overhead irrigation. Drip tape can be applied in strip till systems using properly modified equipment to place in the ground next to plants. Surface applied drip tape is not recommended.

The biggest challenge in each of these systems is weed management, especially in the row. Nonselective herbicides are used before transplanting along with a residual program. Other residuals can be applied between rows with a shielded sprayer. Post emergence applications are limited to grass materials or shielded applications. Irrigation is necessary to activate residual herbicides. See the 2018 Mid-Atlantic Commercial Vegetable Production Recommendations for specific guidance http://extension.udel.edu/ag/vegetable-fruitresources/commercial-vegetable-productionrecommendations/.

<u>Trap Capture Information Delivery</u> - David Owens, Extension Entomologist, <u>owensd@udel.edu</u>

We will be firing up the blacklight and pheromone trap network in the next week or so. I have received several comments about the usefulness of the 800 number hotline Joanne maintained for a number of years. There are three options that I am aware of for trap capture information delivery. The first is bringing back the hotline. The second is an email to text service. This would involve my writing a message and the program would convert it to a text message and send it out. The third option would be a text alert with a link to an online recording. This would require internet access. Please let me know if you have any opinion on the subject that can be used to guide our efforts moving forward into this year. You can email me directly with your response at <u>owensd@udel.edu</u> or fill out a two question survey here: <u>https://delaware.ca1.qualtrics.com/jfe/form/S</u> V 8J07igCxUIRWhAF.

When the platform is selected and set up, we will alert y'all. Thanks!

Strange Mite Pest Found in High Tunnel

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

Over the last three months a few early season high tunnel operations on the Eastern Shore were having problems with some of their seedlings and leaf crops. Crops like spinach would have 'whitening' and then browning and eventually dead margins of their leaves while seedlings would collapse. We found the problem to be 'red legged winter mites' *Penthaleus dorsalis*, which is a new pest in vegetables and herbs for us (Fig. 1). This mite was identified by Dr. Ron Ochoa, USDA, Beltsville. Because these mites are such new pests some of the information presented here is based on other closely related earth mite pest species.

Red legged winter mites thrive in what we would normally consider conditions too cold for an arthropod to cause problems. This mite is cold adjusted and cannot stand hot dry soil conditions and will die as summer heat approaches. Eggs are laid in late spring and they over-summer in the soil. These are stress resistant eggs (i.e., they can withstand drying and heat as well as synthetic chemical applications). In the fall they will begin to hatch, and mites will be active throughout the fall and winter inside a high tunnel with crops. Damage appears as 'silvering' or 'whitening' of the attacked foliage. Mites are most damaging to newly emerging crops, greatly reducing seedling survival and development.

Red legged winter mites are difficult to control even when using synthetic chemicals. Foliar sprays of Pyrethroids (check label for the particular crops that are labeled as this will vary greatly) or Pyrethrum + Neem or *Beauveria bassiana* + Pyrethrum will reduce feeding, but if mite populations are high it will be difficult to eliminate the damage. Applications should start as soon as damage is noticed before mites have a chance to build their population. Foliage should be thoroughly covered with spray material as should the base of plants.

Cultural controls involve using transplants instead of direct seeding, as the mites would do less damage to larger plants. Using high levels of heat such as clear plastic mulch to heat the soil and kill mites and, if used in the summer, kill even their eggs. Steam heat used to control nematodes and soil pathogens can be used to greatly reduce mite numbers before next fall's planting. Many cultivations during the summer can significantly decrease the number of oversummering eggs that survive.



Figure 1. Penthaleus dorsalis

Agronomic Crops

Agronomic Insect Update - April 20, 2018 -

David Owens, Extension Entomologist, owensd@udel.edu

Small Grain

Small grain risk for barley yellow dwarf virus may be lower this year. Aphid populations in the fall were generally low. Cold winters with little snow cover and late, cool springs are generally associated with reduced risk for BYDV. How does this year look? We had a bitter January, extremely warm February, and below average March and April. So far, aphid populations are very low. Winged females started parachuting in with the warm weather last week. The most common species is English grain, although bird cherry oat started showing up in the last couple of weeks. A good key to species can be found here:

http://ipm.ucanr.edu/TOOLS/KEYAPHIDGRAIN/.

The only species we have are the bird cherryoat, greenbug, corn leaf, and English grain. Beneficial insects and aphid-killing fungi are active in fields. One beneficial insect: 100 aphids should result in sufficient aphid control. Scout fields if a pyrethroid has been applied to make sure aphids don't get 'released' from natural enemy pressure.



Winged English grain aphid and non-winged clones in barley last week

With last week's warm weather, we have picked up a couple of cereal leaf beetle eggs in a single field near Milford, and have seen signs of adult feeding in a couple of wheat fields. Overall, numbers are extremely low.

Corn

Corn is starting to go in the ground. Between planting and V4 is a critical time to scout for slug presence and feeding damage. UD extension has a couple of videos on slug scouting which can be found here: <u>https://youtu.be/yJAiut5IHqY</u>, https://youtu.be/-5YD2BArGOg,

https://youtu.be/JM2xTfw7z-M. Cool but not cold, cloudy, wet weather favors slug activity. Windy, dry, or sunny conditions will drive them deeper into the canopy or under residue. Corn is much more resilient than soybean to slug feeding, but may need rescue if half or more of the new leaf growth is destroyed and weather conditions favor slug activity. This is not a hard and fast rule, there is still a lot we don't know about slugs and corn. Oregon has a slug activity predictor that might be interesting to look into: https://agsci.oregonstate.edu/slug-portal/lifeslug/slug-activity-predictor.

Contribute to Cereal Leaf Beetle Science -

David Owens, Extension Entomologist, <u>owensd@udel.edu</u>; Bill Cissel, Extension Agent -Integrated Pest Management; <u>bcissel@udel.edu</u>

As mentioned in this week's scouting report, we are starting to pick up cereal leaf beetle adults and the first eggs in a few fields in Sussex Co. Adults cause only cosmetic feeding scars, but the larvae are voracious and can strip the important flag leaf that contributes to yield.

When scouting small grains, look at 5-10 tillers per site, 10 sites per field at minimum. A treatment may be warranted if 25 eggs and small larvae are found per 100 stems. If only eggs are located, you may want to resample in one week because there can be significant egg mortality. The optimum timing for making an insecticide application if the threshold is reached is 50% egg hatch. Our recommendation guide for small grain insect pest management can be found here: <u>https://cdn.extension.udel.edu/wpcontent/uploads/2012/05/18063827/Insect-Control-in-Small-Grains-final-2017.pdf</u>.



Adult feeding scar in barley last week

When scouting small grains, look at 5-10 tillers per site, 10 sites per field at minimum. A treatment may be warranted if 25 eggs and small larvae are found per 100 stems. If only eggs are located, you may want to resample in one week because there can be significant egg mortality. The optimum timing for making an insecticide application if the threshold is reached is 50% egg hatch. Our recommendation guide for small grain insect pest management can be found here: <u>https://cdn.extension.udel.edu/wpcontent/uploads/2012/05/18063827/Insect-Control-in-Small-Grains-final-2017.pdf</u>.



Two cereal leaf beetle eggs laid in barley last week

In 2010 and 2011, Virginia Tech and North Carolina developed a simple degree day (DD) model that could predict peak egg lay in wheat to within 1 week. The model takes the high/low temperature for the day, subtracts a base insect development temp of 8°C (46°F), and sums up degree days since January 1. The target is 182 degree days (on the Celsius scale, Fahrenheit is going to be 328 DD). This helps really tighten their scouting window for cereal leaf beetle. And, it helps determine if a field may be at risk for insect loss despite prophylactic pyrethroid applications tank mixed with fungicides applied at flag leaf and/or flowering. If a field receives a pyrethroid before the adults are active and laying eggs, the pyrethroid is doing no good. If a field is treated well after peak egg lay, larvae may have an opportunity to injure yield.

We need your help to find out how this model works or might need to be adjusted. For example, according to the model, we will hit the egg degree day soon in Georgetown, yet CLB is just now showing up in fields. You have more eyes on more acres, and your data can help improve this model. Below is a link to a scouting form that you can enter your data in confidentially. By entering field location (or nearest crossroad, town or GPS) we can relate CLB back to temperature data from the nearest weather station. If the model can be improved to fit, this will help you predict when to focus scouting efforts for CLB!

http://www.udel.edu/004764

<u>Starter Fertilizer for Grain Corn</u> - Amy Shober, Extension Nutrient Management and Environmental Quality Specialist, <u>ashober@udel.edu</u>; Jarrod O. Miller, Extension Agronomist, jarrod@udel.edu; Phillip Sylvester, Kent County Extension Agent, phillip@udel.edu; Cory Whaley, Sussex County Extension Agent, whaley@udel.edu

Barring any major weather delays, the lion's share of the corn crop will be planted in the next three to four weeks. Applying starter fertilizer for corn at planting has become standard practice, yet we regularly receive questions regarding the benefits and what nutrients should be included in a starter fertilizer blend. Before we dive into the proverbial weeds, we would like to point out the difference between "pop-up" and "2×2" starter fertilizer setups. Pop-up fertilizers are placed directly in the seed trench with the seed, and because of potential salt-injury, often contain low-salt formulations of fertilizer and are used at low rates. Emergence may be delayed if too much fertilizer is used due to burning of the roots by the fertilizer. More common is the 2×2 setup, which places fertilizer in a band 2" off to the side and 2" below the seed, because it is less likely to injure roots. Therefore, more fertilizer can be used in a 2×2 setup and has greater utility for supplying nutrients to young corn. While pop-up fertilizer setups might be useful, especially for applying pesticides directly in the furrow, the focus of the article will be on 2×2 setups.

Now on to what to include in a starter fertilizer mix for corn. While dry fertilizers were the standard years ago, most growers have switched to liquid formulations for ease of handling and blending with other nutrients. Applications of nitrogen (N) and sulfur (S) are common in starter fertilizers, as they have been shown to be quite effective at increasing early season growth for corn planted in Delaware's sandy, low organic matter soils. Increased N-use efficiency has been observed when N is applied at planting (15 to 25%) and again when plants are 12 to 15 inches tall. Commonly used N containing liquid starter fertilizer products include UAN (30 or 32%), ammonium polyphosphate (10-34-0 or 11-37-0), and ammonium sulfate (8-0-0-9S). Sulfur should be included in a starter fertilizer, and at rates high enough to sustain the corn crop through V5. High yielding, irrigated corn may require 30 to 40 lbs/ac of sulfur, which can be split applied at planting and again at sidedress. As mentioned above, ammonium sulfate will supply both N and S and should be used instead of ammonium thiosulfate (S not immediately available to the plant). Ammonium sulfate has a strong acidifying effect, which can make certain micronutrients more available in high pH fields, averting deficiencies.

In addition to N and S, you may be wondering if applications of other nutrients, mainly phosphorus (P) or micronutrients, such as zinc (Zn), manganese (Mn), or boron (B), would be beneficial. Here are some guidelines to help you decide on what nutrients to include in your starter fertilizer. Researchers typically agree that application of starter P can be beneficial and improve crop growth when soil test P concentrations are below the agronomic critical level (<50 FIV). When soil test P is <100 FIV, we recommend application of 20 to 40 lb P_2O_5 in the starter band, with higher rates reserved for soils testing low or medium in soil test P. Even so, the efficacy of starter P is variable when soil test P is within the agronomic optimum range (50 to 100 FIV). Based on 62 site years of data from starter P strip trials, Cornell researchers recommended that applications of >25 lb P_2O_5 could be beneficial for soils with no manure history. However, when soil test P is in the optimum range and the field has a history of manure application, Cornell researchers suggest you skip the starter P. Cornell researchers also do not recommend application of starter P when soil test P concentrations are in the excessive range (>101 FIV), regardless of manure history. We concur with this recommendation based on results of recent small plot studies (conducted by University of Maryland in conjunction with University of Delaware) in Maryland on soils with excessive soil test P, even when those soils received no additional P for 15 years. In the MD small plots, we saw an early season response (visual) to starter P, but that response did not translate into a yield response.

What about micronutrients? The potential for Mn deficiency is predicted based on the Mehlich 3 Mn concentration and soil pH. Similarly, potential for Zn deficiency is predicted based on Mehlich 3 Zn concentration, soil pH, and soil test P concentration. Detailed instructions for determining the Mn and Zn availability index is available online as part of the University of Delaware fertility recommendation for grain corn: (Link). If Mn or Zn deficiency is predicted by a soil test, or you have documentation of Mn or Zn deficiency in your field, you may benefit from application of these nutrients in the starter band. When banding Mn or Zn, lower rates can be applied, particularly if using a chelated micronutrient. University of Wisconsin recommendations are <u>0.5 lb chelated Mn/acre</u> or <u>0.5 to 1 lb chelated Zn/acre</u>. Broadcasting micronutrients aren't recommended when soil tests are low, as they are likely to be tied up in the soil. Boron deficiency has been noted occasionally in intensively managed, irrigated corn, but we currently do not recommend starter applications of B.

A couple final thoughts on starter fertilizer applications; as you may have already figured out, it is nearly impossible to squeeze everything vou want in a starter fertilizer mix because of volume and equipment limitations. Even if you could, there are limitations due to potential fertilizer salt injury next to the seed. The standard recommendation is no more than 75 to 100 lbs of N+K in a 2×2 setup, with the lower limit for sandy soils. Therefore, think about what is most likely to give you a return on investment. In Delaware, leachable nutrients like N and S should be at the top of your list. How are you going to supply enough of these nutrients early season, particularly S? Starter fertilizer blends can provide enough N and S (and micros) to get the plant off to a good start and through V5, but you may not be able to include much P in the mix. When deciding on a starter fertilizer blend, think about return on investment, and what makes the most sense given the limitations.

Horseweed Control for Soybeans - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Horseweed (or marestail) can be challenging to control in soybeans, but planning ahead can improve horseweed control. The biggest reason for poor horseweed control is treating large plants. Horseweed over 4 to 5 inches tall are hard to control, regardless of the herbicide used. 2,4-D, Sharpen, dicamba, or Liberty can provide good to excellent control if used at the full rate and applied to small plants. The full rate of 2,4-D is 1 lb of acid (1 qt of most products) and Sharpen at 1.5 oz. Both have a waiting period between application and planting, and trying to reduce the rate of these products and reduce the waiting period often results in reduced control.

We have seen more horseweed emerging in the spring and so if a field is treated 3 to 4 weeks prior to planting there is a chance that horseweed seedlings can emerge before planting. This will either require the use of a residual herbicide with the burndown application (i.e. Valor, Authority products or metribuzin) or a second burndown application at planting; and consider paraquat for this at planting application. Applying a residual herbicide 2 to 4 weeks after planting is not the approach to take for fields with Palmer amaranth, because those fields need the residual herbicide to be applied at planting to provide adequate length of control after the soybeans are planted.

Also, using Sharpen four weeks before planting increases the options of residual herbicides at planting. The Sharpen label does not allow another group 14 herbicide (Valor, Authority product, or Reflex) within 30 days of application on coarse-textured soils with low organic matter or 14-days for all other soil types.

General

<u>Guess the Pest!</u> <u>Week #3 Answer: Minute</u> <u>Pirate Bug or Insidious Flower Bug</u> - Bill Cissel, Extension Agent - Integrated Pest Management; bcissel@udel.edu

Congratulations to John Comegys for correctly identifying the insect as a minute pirate bug or insidious flower bug 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!



All bugs suck, but not all bugs are bad.

The minute pirate bug or insidious flower bug may look like a beetle but it is actually a "bug" meaning it has piercing-sucking mouth parts. This insect is usually considered a beneficial insect and not a pest but has been known to bite humans, inflicting a sharp and painful bite. It is commonly observed in greenhouses preying on thrips, various insect eggs, and other small, soft bodied arthropods.

The larger than life photo is also misleading and the adult is actually small, only about 1/16" in length. The immature bugs called nymphs resemble the adults in shape but lack wings and are a reddish - orange color. The nymphs, similar to the adults are also predators and feed on small arthropods.

Guess the Pest! Week #4 - 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 <u>A</u> Farmer's Guide To Corn Diseases (\$29.95 value).



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

Yes, even IPM folks sometimes get tired of talking about pests, so for this week, we are going to have some fun guessing the cover crop species. If you think you know your cover crops, submit your best guess for each picture below:



Photo 1



Photo 2



Photo 3



Photo 4

What are those cover crops?



Announcements

2018 Delaware Cooperative Extension Horticulture Short Courses

Register for these courses online.

Proper Planting Technique

\$15, 1 CNP, 2 ISA credits
Thursday, April 26, 4-6 pm,
Sussex County Extension Office,
16483 County Seat Highway, Georgetown
Learn how to properly plant both container and balled and burlapped trees. This course will focus on site

preparation and planting technique to increase tree survival. There will be a hands-on component to the workshop.

Instructors: Susan Barton and Brian Kunkel

Christmas Tree Production and Pests

\$10, 2 Pest., 1 CNP, 2 ISA credits Wednesday, April 25, 4-6 pm Delaware Department of Agriculture 2320 S DuPont Highway, Dover

Learn to identify and control important insect pests and plant diseases that affect Christmas Tree Production. **Instructors:** Brian Kunkel, Nancy Gregory, Jeff Brothers

Pest and Beneficial Insect Walk

\$15, 2 Pest., 1 CNP, 2 ISA credits
Wednesday, June 6, 4-6 pm
Sussex County Extension Office
16483 County Seat Highway, Georgetown or

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

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

The 2018 Weed Science Field Day will be held the morning of Wednesday, June 20 at the University of Delaware Research and Education Center, Georgetown, DE. More details will be available at a later date.

Tours and Discussion of Cover Crop Demonstration Plots

Tuesday, May 1, 2018 6:00-7:00 p.m. UD Carvel Research & Education Center 16483 County Seat Hwy, Georgetown, DE

or

Thursday, May 3, 2018 6:00-7:00 p.m. UD Demonstration Site on Marl Pit Rd Just west of intersection of Cedar Lane and Marl Pit Rd, Middletown DE

We are holding two twilight tours. Both on the same topics, Walk through the demonstrations of plots planted last fall:

- 1. Cover crop species
- 2. Cover crop mixes
- 3. Cover crop planting dates

Discussion on issues associated with terminating cover crops, slugs and insect issues, effect on weeds, soil health, and planting

0.5 credit for nutrient management and 0.5 CEU for CCA (Soil and Water category)

For more specifics visit DECCnetwork.com

In case of threatening weather call 302/856-7303

New Castle County rain date is May 8, and Sussex County is May 10.





UD Cooperative Extension presents Cover Crop Twilight Tour



MAY 1 6PM-7PM RESEARCH AND EDUCATION CENTER 16483 COUNTY

GEORGETOWN

MAY 3 6PM-7PM

MARL PIT ROAD DEMO SITE

TERSECTION OF ARL PIT RD AND CEDAR LANE

MIDDLETOWN

ECCNETWOR

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of April 12 to April 18, 2018

Readings Taken from Midnight to Midnight

Rainfall:

0.54 inch: April 15 1.12 inch: April 16

0.01 inch: April 17

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Air Temperature:

Highs ranged from 81°F on April 14 to 48°F on April 17.

Lows ranged from 63°F on April 14 to 35°F on April 18

Soil Temperature:

54.7°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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