



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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May 4, 2018

Vegetable Crops

The Current Outbreak with Toxic *E. coli* in Romaine Lettuce - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

There are 121 confirmed cases across 25 states in the *E. coli* outbreak from eating romaine lettuce from the Yuma, Arizona growing region. There have been 52 hospitalizations from the outbreak strain of *E. coli* O157: H7. Fourteen (14) people have developed hemolytic uremic syndrome, a type of kidney failure and there has been 1 death. Additional cases are expected.

Yuma County ranks second among U.S. counties for lettuce and spinach production and is the major winter production area for leafy greens in the country. Currently Yuma is finished with production (which moves back to California) but effects of the outbreak are still lingering.

So far, only one farm has been identified as a source of the outbreak strain on whole romaine. Other farms supplying romaine lettuce for chopped, bagged products are being investigated (over a dozen fields).

What makes this more alarming is that Yuma, Arizona growers are part of a Leafy Greens Marketing Agreement and follow strict produce food safety guidelines.

In our Eastern seaboard region, there is significant lettuce, spinach, and other leafy greens production in New York, New Jersey, and North Carolina. Delmarva produces significant amounts of spinach but this is mostly for

processing. Leafy greens are an important and profitable crop for many small growers throughout our area.

Potential sources of the toxic *E. coli* strains include cattle manure, wildlife droppings from animals such as deer, and contaminated irrigation water.

Growers of leafy greens are advised to revisit their food safety plans and take steps to eliminate possible contamination of product with *E. coli*.

Poor Stands or Stand Loss Due to Poor Seed or Plant Quality, Revisited - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

With the first hot days of spring, planting is progressing at a rapid pace. With each new planting season there will be reports of poor stands or stand losses in vegetable crops. The culprits are often soil insects or diseases; however, poor quality seed or plants can also be a source of the problem. You will most commonly see problems with poor quality plants or seeds when there are adverse weather conditions after planting.

Seed Quality Problems

As we progress into the warmer part of the planting season, it is often assumed that late spring and summer plantings will not have stand issues as soil temperatures are warm and seeds should germinate and emerge quickly and plants should root out quickly if there is adequate

moisture. With seeds, this is not always the case, especially if seed lots are of low vigor. Signs of low vigor seed will be abnormal appearance in the bag (shriveled, cracked, off color, misshapen), small seedlings that emerge late or do not emerge at all, abnormal growth (twisting, snaking, or corkscrewing), small shriveled cotyledons in beans, small or distorted true leaves, swollen or split hypocotyls or coleptiles, and bleached out seedlings. Another issue affecting seed germination and emergence can be uneven or inadequately applied seed treatments (fungicides and insecticides).

Seed companies do a very good job of producing quality seed and most seed is produced in drier areas where seed diseases are limited. Once seed is harvested it is conditioned, treated, packaged, and stored. As seed is distributed it often goes through several phases of where it is handled and stored in different environments. Larger lots may be broken in to smaller units and then repackaged by resellers. Once seed arrives at the grower it will be stored and handled again, finally making it to the planter or greenhouse for transplant production. In each new storage and handling activity, there is potential to do damage to the seed. Rough handling, high temperatures, and high humidity are particularly damaging to seeds.



Poor quality seed can lead to poor stands even under higher soil temperatures.

Transplant Quality Problems

Poor quality plants can be due to diseases or

other pest damage. There are however other causes of quality issues in plants such as being poorly hardened off, overwatered, stressed, over or under fertilized, overgrown or leggy, over mature, or root bound. Chemical phytotoxicity can be another problem. As with seeds, improper plant handling can lead to quality problems including overcrowding in greenhouse and holding areas, rough handling of trays, and storing in light limited conditions for extended periods. Breaking plant stems plants, especially those that with excessive growth, is a common problem in transplanting as is damage to roots when pulling plants out of trays.

When troubleshooting stand losses it is important to consider these issues affecting seed or plant quality.

Vegetable Insect Update - May 4, 2018 -

David Owens, Extension Entomologist,
owensd@udel.edu

Imported cabbageworm adults have been active for several weeks, and eggs and larvae can be found in fields. Other worms may start moving into brassicas, be sure to identify what you have. In general, seedling stage thresholds are 20% infested plants, 30% for early vegetative to cupping. Once cupping begins, thresholds for cabbage and Brussel sprouts plummets to 5% because we need to keep worms out of the harvested portions, and for other brassicas thresholds decrease to 15% and then 5%. Cole crop insect management recommendations can be found here:

<https://cdn.extension.udel.edu/wp-content/uploads/2012/03/26074054/ColeCrops.pdf>.

Seed Corn Maggot - *David Owens, Extension Entomologist,* owensd@udel.edu; *Bill Cissel, Extension Agent - Integrated Pest Management;* bcissel@udel.edu;

Yesterday we finished digging up pea plants planted on April 3 immediately following a heavy application of manure. Although plants came up (slowly), we are just now seeing maggot damage, probably because early instar maggots were feeding on the organic matter before

getting large enough to overcome our treatments. Maggots were late instar going into the pupae stage in Georgetown. With the warm weather, we will probably see second generation fly activity next week. Previous seedcorn maggot trials at UD have planted within 1 - 2 weeks of a manure application. If at all possible, plant a minimum of 3 weeks after working manure, compost, or a cover crop into the soil. If you do not have treated seed, are planting into a recent organic matter amendment, and are planting after mid-week, an in-furrow pyrethroid is your best management option.

Seed Corn and Cabbage Maggot Damage is Bad in Some Vegetable Fields - Jerry Brust, *IPM Vegetable Specialist, University of Maryland*; jbrust@umd.edu

The cool and sometimes wet weather we have had over the last two months made some vegetable fields vulnerable to seed corn maggots *Delia platura* (SCM) or cabbage maggots, *Delia radicum* (CM). Both species overwinter in the soil as a maggot inside a brown case. In March and April small, grayish-brown flies emerge. Adult flies are most active from 10 a.m. - 2 p.m. and are inactive at night, in strong winds and when temperatures are below 50° F or above 80° F. Female cabbage maggot flies seek out and lay eggs on the lower portions of stems of young host seedlings or in nearby cracks in the soil. Within a few days the eggs hatch and the tiny maggots burrow down to the roots and begin feeding. SCM eggs are oviposited in soils with decaying plant material or manure. The adults also are attracted to the organic media around the roots of transplants and germinating seeds. That is why fields that have been fumigated can still have problems with SCM. Maggots will move into small stems and move up the plant causing a swelling of the stem just above ground level, while also causing root collapse and decay. If these stems are split you will usually find the white cylindrical larvae (Figures 1, 2 and 3).

The adult flies are often found dead, stuck to vegetation during periods of warm wet weather (like we are starting to have now). These flies have been infected by a fungus, *Entomophthora* sp. These infected flies usually will be found at

the top of a tall object in the field such as a grass seed head or a wire field-flag (Fig. 4). Just before the fungus kills them the flies cement their body via their mouthparts to a tall object and die. If you look closely you'll see the body is filled with the white fungus that has ruptured between the segments (Fig. 5). Being on a tall object allows the spores of the fungus to move longer distances and infect more flies than if the fly had died on the ground. I have started seeing fungus infected dead flies in vegetable fields, but the infection rate is not enough to reduce the SCM populations or their infestations, only warm/hot dry weather will do that.

Soil temperatures two inches deep in the planting hole that are at or above 70°F reduce SCM egg laying and larval survival. If soil temperatures are above 70°F at planting but fall below this level for several days in a row, SCM adults will begin to oviposit eggs at the base of transplants. When wilted transplants are inspected in the field, maggots are often not found (they have already pupated), but their tell-tale damage is a hollowed-out stem or root held together by a few strands of plant material. The use of treated seed for seed plantings or in-row banding of an insecticide for transplants gives moderate to good control of SCM, however, replacing dead transplants is the only solution after SCMs kill a plant. Once seed corn maggot damage is noticed, it is too late to apply control procedures. Thus, economic thresholds are not useful, and all management options are preventative.



Karen Rane



Ric Bessin



Karen Rane

Figures 1, 2 and 3. Swollen stem of cucurbit plant with collapsed rotting roots. When stem is cut open the white maggots often can be found.



G Brust

Figure 4. Two SCM flies killed by a fungus stuck to a wire field-flag via their mouthparts



G Brust

Figure 5. Adult SCM killed by a fungus - white strands coming out of abdomen

Problems with Pollination in High Tunnel

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

Some mid-Atlantic growers are seeing excessive tomato blossom drop in their high tunnels (HTs). Flowers are forming but then abscising from the plant (Fig. 1). In a few of the high tunnels bumblebees were used to pollinate the flowers (Fig. 2) and growers thought the bees were a little too aggressive in their pollination enthusiasm and that they were damaging the flowers (Fig. 3) to the point they would abort.

But I think it is more likely environmental factors are causing the flower drop.



Figure 1. Flower abortion on tomato plant.

So, I'll start with a quick recap as to how tomato flowers are pollinated and fertilized. Tomatoes are self-pollinated at the frequency of around 96% of the time. Tomato flowers are complete flowers that have both male (stamen) and female (pistil) parts within the same flower. The yellow anthers (pollen producing parts) of the stamen wrap around the pistil which is in the center of the flower. The style with the stigma on its end is the part of the pistil that extends above the anthers. Tomato pollen is heavy and sticky and needs to be jostled loose from the male to fall onto the female. This 'jostling' can include wind or insect visits. Once pollen is shed onto the stigma of the flower, fertilization can take place. Without pollination the pedicle turns yellow, the flower dies and then drops. Tomato flowers must be pollinated within 50 hours of forming or they will abort. Pollination usually occurs between 10 a.m. and 4 p.m.

Unfortunately, there are numerous factors that can cause tomato plants to drop their blooms. One of the main ones is temperature. Tomato plants will drop their flowers when daytime temperatures are above 85°F or when nighttime temperatures are above 70°F. Obviously this can and does occur during mid-summer. In the early part of the season low nighttime temperatures below 55°F can interfere with the growth of pollen tubes or cause the pollen to become sterile, preventing normal fertilization and causing flower drop. Fruit will not set until

nighttime temperatures are above 55°F for at least two consecutive nights. The relative humidity (RH) also can play a role in poor pollination and fruit set. The best RH for tomato development is between 40% and 70%. Low RH (<40%) can dry pollen out making it unable to stick to the stigma. A high RH (>70%) can prevent the pollen from being shed properly. While there are other factors that have been found to influence pollination in tomato such as levels of nitrogen that are either too high or too low, too high or low soil moisture, a heavy fruit set, excessive wind that can desiccate flowers, and the lack of sufficient light these are minor factors compared with temperature.

Bumblebees pollinate tomato flowers by sonication or buzz pollination. They will fly up to a flower and grasp the anthers with their mouth parts and hold tightly. They then vibrate their wing muscles which causes pollen to drop from the anthers onto the stigma causing pollination and at the same time the bumblebee gets to collect some of the pollen (Fig. 2). This grasping of the tomato flower by the bee leaves a mark on the flower (Fig. 2) and can cause flower damage if visited too many times (Fig. 3). When there are fewer flowers than what would normally be expected fewer bumblebees should be released to prevent overzealous bee visits.



Figure 2. Bumblebee visiting tomato flower results in pollination. Arrow shows marks by other bee visitors.



Figure 3 These tomato flowers may have been visited too many times by bumblebees.

This year we have had an unusually cool spring and even in high tunnels the temperatures, especially at night, were not conducive for flower pollination and fertilization. Some growers who used bumblebees did have higher levels than usual of bee love as the bumblebees repeatedly visited the few flowers that were forming causing some of the flowers to abort. But this was a very small amount compared with what the cooler temperatures were doing to tomato pollination. Reports out of the Midwest and the Northeast say similar things, poor fruit set in high tunnel tomatoes up to this point in time and most of these high tunnels did not use bumblebees. Besides the direct effect of cooler temperatures on tomato pollination, the cooler than normal temperatures and often overcast skies also caused growers to not ventilate their HTs as much, reducing the probability of wind pollination of their tomato plants. Most growers depend on wind pollination for tomato pollination even in high tunnels. An excellent source for further description of problems with tomato pollination can be found at: *Blossom Drop, Reduced Fruit Set, and Post-Pollination Disorders in Tomato* by Monica Ozores-Hampton and Gene McAvoy, University of Florida HS1195: <http://edis.ifas.ufl.edu/hs1195> .

Agronomic Crops

Agronomic Insect Update - May 4, 2018 -
David Owens, Extension Entomologist,
owensd@udel.edu

Alfalfa

Continue scouting alfalfa for alfalfa weevil damage. With the warm weather we have been having, they are active state-wide. When

sampling, collect 30 stems (stems should be taken from several locations in the field), and beat bundles of 5-10 stems to dislodge larvae. Thresholds for alfalfa weevil depend on the number of larvae found, the growth stage of the plant, and the size of the plant. Early harvest may be an option. We have a video demonstrating weevil sampling: <https://youtu.be/M983UMsGk0Q> an alfalfa weevil fact sheet for thresholds and decision making: <http://extension.udel.edu/factsheets/alfalfa-weevil-control-in-alfalfa-2/> and finally, insect control recommendations here: <https://cdn.extension.udel.edu/wp-content/uploads/2012/05/25073121/Insect-Control-in-Alfalfa-2018.pdf>.

Grain Crops

David Owens and Bill Cissel

Virginia has started seeing large numbers of brown stinkbugs in small grain cover crop and production fields. Stink bugs are not a pest of small grain, but will put their first generation into small grain. Where this becomes a potential concern is later in the season when wheat is harvested and the stink bugs need to go elsewhere. Corn is not susceptible to stink bugs until V3-V4, when the growing point moves out of the soil.

Cereal leaf beetle activity has picked up recently, though I have not yet heard of a field at threshold. Continue scouting your fields. Virginia reports that true armyworms have not been very active yet, and we have only picked up a couple of moths in light traps. Sawflies are just starting to be active. Pay attention to the number of legs. Sawflies have legs on every segment, they are active on plants during the day, and the threshold for them is half that of armyworm. More information can be found in our small grain recommendation guide.

Insecticide Recommendations Updated for the 2018 Season, AGAIN - Bill Cissel, Extension Agent - Integrated Pest Management; bcissel@udel.edu; David Owens, Extension Entomologist, owensd@udel.edu

It never fails. The second you share the link to the insecticide recommendations, you realize

the recs need to be updated which ultimately breaks the link. To help solve this, we have created crop specific “pages” where sampling guidelines, action thresholds, fact sheets and insecticide recommendations can be found in one place. If you book mark this page, you can easily access the insecticide recommendations and other scouting guidelines. This will also allow us to update the insecticide recommendations as needed without having to continually share a new link. Sorry for any inconvenience this may have caused and hopefully the creation of these new “crop specific” pages will solve this problem in the future.

Field Corn Insect Management:

<http://extension.udel.edu/ag/insect-management/field-corn/>

Small Grain Insect Management:

<http://extension.udel.edu/ag/insect-management/small-grains/>

Alfalfa Insect Management:

<http://extension.udel.edu/ag/insect-management/alfalfa/>

Soybean Insect Management:

<http://extension.udel.edu/ag/insect-management/soybeans/>

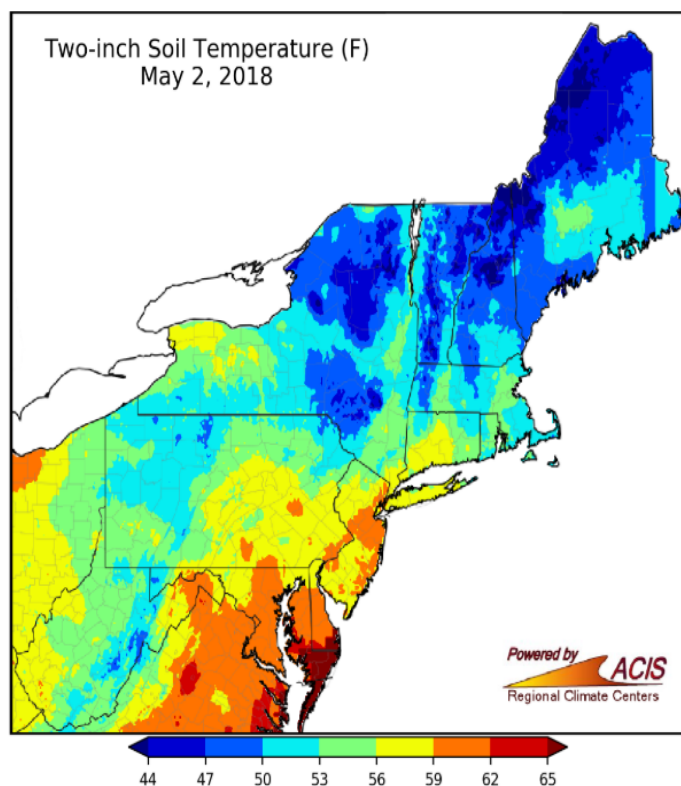
Corn Emergence is Expected Soon, Take Time to Evaluate Stands - Amy Shober,

Extension Nutrient Management and Environmental Quality Specialist, ashober@udel.edu; 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

Corn emergence is expected soon. Take the time to evaluate your stands to protect your bottom line.

Soil temperatures need to stay above 50°F and we need to accumulate 100 to 125 growing degree days (GDD) in order for corn to germinate and emerge. From April 22 to May 1, soil temperatures have consistently stayed above 50°F from Georgetown to Newark, and most parts of the state have gotten some rainfall to

keep the soil surface moist. Sussex County is a little bit ahead of Kent and New Castle Counties in terms of GDD (68 in Georgetown vs. 61 and 47 in Dover and Newark, respectively since April 22). A new online tool developed by Cornell University allows you to estimate growing degree days from planting for your own fields: <http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/> With the end of this week temperatures topping out in the upper 80s, some of your fields that were planted last week may start to emerge.

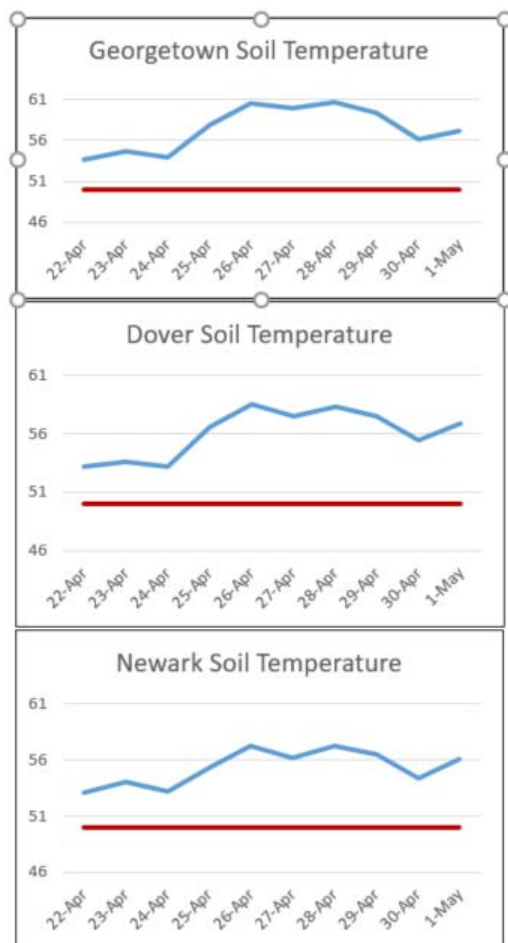


Two-inch soil temperature estimates for the Northeast from Northeast Regional Climate Center <http://www.nrcc.cornell.edu/>

We suggest going back and checking these earlier planted fields for emergence if time allows. Checking previously planted fields allows you to look for and identify any emergence issues, which may be related to lower soil temperatures due to surface residues, compaction, or planting depth. If you find that your calibrated seeding rate or depths were off, you have time to make adjustments now for fields you have yet to plant.

You might also consider completing stand counts on fields where corn has emerged to assess the potential for your field to achieve maximum yields. Early stand counts can also aid in decisions on whether or not to replant. Taking stand counts is relatively quick and easy; measure off the appropriate length (17.5 ft for 30 inch rows, 20 ft for 20 inch rows, or 35 ft for 15 inch rows), count the number of plants, and multiply by 1000, which will give you a stand count in plants per acre. Collect these counts for at least 5 locations in each field and take an average to get your final stand count. Even though you are likely busy planting other fields, taking a little bit of time to evaluate your early planted stands can help ensure that stand problems don't affect your bottom line come harvest time.

Soil Temperatures from weather stations in Sussex, Kent and New Castle counties.



Spraying Dicamba and 2,4-D for Burndown

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

I noticed some grapes have started to leaf out, and flower buds are exposed. This prompts me to remind everyone who is spraying 2,4-D or dicamba to be mindful of your neighbors and adjacent properties. While new formulations of dicamba (Banvel) and 2,4-D are less volatile, they are not "volatile-free". As temperatures increase, the risk of off-target movement increases as well.

New formulations are prone to physical drift same as the old formulations. The droplets moving off-target as soon as they leave the spray nozzles due to wind is still the most likely cause of off-target movement. Larger droplets are less prone to drift, but wind speed and temperatures above 85°F also increase the risk of spray drift. Temperature inversions allow droplets to remain aloft and very small droplets can move.

Finally, these new formulations are no safer to susceptible vegetation than older formulations. Injury to grapes, beans, tomatoes, and soybeans (and other broadleaf plants) is just as severe with these new formulations as with older formulations.

Be sure you are aware of surrounding fields and sensitive vegetation; read the label for all precautions and application restrictions; and do not spray when conditions favor off-target movement of 2,4-D or dicamba.



Issues to Consider with Cover Crop

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

With brassica cover crops in full bloom and crimson clover starting to bloom, remember why you planted the cover crop in the first place.

Most benefits of cover crops are maximized by allowing cover crops to develop later into the spring. As cereal rye gets taller, the stems develop more lignin and are more resistant to breaking down and they last longer on the soil surface. The more “lignin-ified” the tissue becomes, the longer it provides weed suppression and the better it will prevent moisture evaporation from the soil. The longer the legumes are allowed to grow, the more nitrogen being produced for the cash crop. Be aware that by allowing cover crops to reach the flowering stage, the cover crop is producing viable seeds that could cause an issue in subsequent crops. Volunteer cover crops are the biggest challenge if small grains will be planted in the fall.

While more cover crop biomass is better for some objectives, later terminated cover crops can pose some challenges. At this time of year, cover crops are using a lot of soil water. They can deplete soil moisture quickly, leaving a dry seedbed for the cash crop. In addition, by depleting the soil moisture, the cover crops themselves will undergo stress and maybe more difficult to control. So, if you have not killed your cover crop yet, be sure to look at the weather forecast for rain, and do not put yourself into a difficult situation by allowing the cover crop to use all the soil moisture if there is a poor chance of rain. On the other hand, you may consider delaying terminating the cover crop until rain comes and replenishes soil moisture.

We have done some work with planting green, meaning not killing the cover crop until after planting. This has potential, particularly if the cover crop was planted late and an additional 10 to 14 days of growth will provide substantially more biomass. Be sure you have a planter outfitted with plenty of weight and sharp cutting coulters to provide a good seed furrow. Your planter should be outfitted with a guidance system because it will be very difficult to use

row markers. Apply your burndown herbicide after planting and use high gallonage to achieve good coverage of the cover crop and weeds present. We use 20 gallons per acre and that seems to be adequate.

Planting is best if the cover crop is either dead or not sprayed yet. Cover crops that are in the process of dying can be challenging to plant into because the stems are harder to cut with a coulter. We typically plant into a standing cover crop and have been very successful in getting a good crop stand. In addition, we typically do not roll our cover crop when planting soybeans. We plant in 15-inch rows and all the planter units are on a single tool bar. This single line of planter units knocks over most of the tall rye. However, if 15-inch planter units are on two tool bars, I have seen more of the rye to remain standing after planting.

There is still a need for residual herbicides for most fields with cover crops. The benefit of the cover crop for weed management is fewer weeds present (weed density is reduced) and growth of the weeds is slower, so weeds are smaller when postemergence herbicide applications are made. So, cover crops improve overall weed control; but in fields with heavy weed pressure, they do not replace herbicides.

General

Guess the Pest! Week #5 Answer: Cutworm

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

Congratulations to John Comegys for correctly identifying damage as cutworm 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!



Cutworm

By David Owens, Extension Entomologist

Corn planting is at full speed, and early season insect pest pressure is not far behind. The above photo is an example of small larval cutworm feeding injury to field corn. Small larvae cannot cut plants, they will chew holes through the whorl that, as the leaves unfold, leave a characteristic, symmetrical shot hole pattern. Cutworms can be a significant corn pest. Older larvae can bore through larger plants causing dead heart and cutting plants off at the ground level.

In general, there has been a trend towards decreasing cutworm activity, though not as strong as the trend seen with European corn borer. How can we manage cutworm, and what do the holes mean? First, many of the Bt varieties have suppressive efficacy on early instar cutworms. Please reference the Handy Bt trait table here: <https://lubbock.tamu.edu/files/2018/01/BtTraitTableJan2018.pdf>. There are traits that do not have cutworm efficacy, so know what you have! DoublePro, TriplePro, and Yieldgard corn do not have traits that are effective on cutworm. If you see this type of injury in fields planted without an effective trait, pay special attention to the field and be ready to treat it with a pyrethroid if you see 5% damaged plants and you find larvae. But what about those fields that do have one of the traits that does have suppression activity (Cry1F or Vip3A)? The Bt traits are stomach active toxins, and specific to target insects or groups, meaning they need to be ingested and there is specificity. Rootworm traits only work on rootworms, not on wireworms, caterpillars, or grubs. Larvae may feed on plants for short period of time before dying. If you see this type

of injury in a field with Cry1F and Vip3A corn, monitor, preferably within a few days. It also means that traits are most effective on small larvae that require less of a dose. We are seeing large dingy and black cutworms out right now in some cover crops. These will be done with their life cycle by the time the field is planted and seed germinating. However, cover crops are attractive to ovipositing moths, so if a field is planted soon after burndown or into a green cover, pay attention to stand. A few holes in leaves will alert you to a population, but if that is all you see in consecutive field visits, the traits have probably done their work. My colleagues in western states will caution that if initial populations are REALLY high, the traits may need to be supplemented with additional control. It also pays to scout a field. There are seedling corn pests that are not managed by any Bt trait. If you see feeding injury, try to find the culprit as best as possible.

Supplemental control can be in the form of a non-neonic seed treatment. Right now, there is chlorantraniliprole, trade name Lumivia (same active ingredient as Prevathon and Coragen). It is rated by Auburn and University of Tennessee entomologists Dr. Kathy Flanders and Dr. Scott Steward as having good efficacy for cutworm. Neonics do not. You can find their efficacy charts here: <http://blogs.ext.vt.edu/ag-pest-advisory/files/2014/10/Field-corn-insecticide-seed-treatment-chart.pdf> and here: http://www.utcrops.com/cotton/cotton_insects/pubs/PB1768-Corn.pdf.

Additional control can be achieved with a pyrethroid. What scenarios are at greater risk for cutworm? LATE planted fields that have living weeds/cover within a week of or two of planting. Pay special attention to these fields and to fields planted green. As we wrote recently, there is a cost/benefit trade off with high seed treatment rates and a pyrethroid in furrow/over the soil. The closer you are to planting, the more likely a pyrethroid at burndown will hit an insect pest. However, if you are not planting right away, pyrethroids break down over time. Should another seedling pest move in, the original spray will not be effective. If your concern is soil pests such as wireworm, put the pyrethroid in the furrow. The pyrethroid should still have efficacy on cutworm.

Guess the Pest! Week #6 - *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 pest?](#)



Announcements

2018 Delaware Cooperative Extension Horticulture Short Courses

[Register for these courses online.](#)

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.

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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<h1>Weather Summary</h1>	
Carvel Research and Education Center Georgetown, DE	
Week of April 26 to May 2, 2018	
Readings Taken from Midnight to Midnight	
Rainfall:	
0.34 inch: April 27	
0.06 inch: April 29	
Air Temperature:	
Highs ranged from 89°F on May 2 to 58°F on April 29.	
Lows ranged from 54°F on May 2 to 41°F on May 1	
Soil Temperature:	
59.1°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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