



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

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

Sweet Corn

This is the last week that we are checking pheromone and blacklight traps. Many thanks to Richard Monaco and Joseph Deidesheimer for faithfully and routinely checking traps Monday and Thursday. Also, thanks to Jon Baker with Trapwoods and Harry Thompson for sending in trapping information. Moth counts from Thursday are as follows:

Trap Location	BLT - CEW	Pheromone CEW
	3 nights total catch	
Dover	1	51
Harrington	1	6
Milford	3	23
Rising Sun	0	3
Wyoming	1	28
Bridgeville	2	55
Concord	1	11
Georgetown	3	10
Greenwood	1	--
Laurel	3	17
Seaford	6	4
Millsboro	2	22
Lewes	0	3

Peppers

Continue scouting for beet armyworm. Moths continue to be active and lay eggs. Look for webbing and fine skeletonizing on the upper canopy indicating small larvae are present.

Spinach

Continue scouting for beet webworm. Moths are numerous in flowering crops right now, especially old watermelon and lima bean.

Cole Crops

Diamondback moth has not been as abundant this year as last year, but that seems to be compensated for with an abundance of cabbage looper, cross striped worms, beet armyworm, and the occasional corn earworm. As a reminder, beet armyworm is resistant to pyrethroids. Corn earworm burrows into heads pretty deeply and is also less susceptible to pyrethroids. Rotate modes of action and save some of the broad spectrum materials for later in the season after parasitoids have done their work.

Lima Beans

Continue scouting for soybean looper. Avaunt eVo now has a 2ee recommendation for soybean looper treating using the same rates for corn earworm. It has a 3 day PHI. In field crops the active ingredient is formulated as Steward. It does a pretty good job on loopers. The 2ee can be found at <http://www.cdms.net/ldat/ldG4P003.pdf>.

It's a Good Time to Check Vegetables for Root Knot Nematode – Jerry Brust, IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu

As this growing season winds down, and for the next few weeks, it is a good time to examine vegetable roots for root knot nematode (RKN). I would be suspicious of having RKN if my vegetables seemed to need more water than normal or wilted during the heat of the day and recovered later or plants had nutrient deficiency symptoms rarely seen in your fields and the addition of fertilizers did not seem to alleviate the deficiency symptoms. Other symptoms to be suspicious of include plants in some areas appearing stunted with either lower yields or poorer fruit quality. If these vegetable problems were noticed in spots in the field that seemed to follow down a row year after year, there is a chance you have RKN and you should check your vegetable roots for galls.



Figure 1. Tomato roots without (a) and with galls (b) from root knot nematode infection

When you are done harvesting your field dig—do not pull up—your plants that are having problems and some of the plants that border these problematic plants. If the ground is moist when you dig it makes the whole process much easier. Wash the roots with water or dip plant roots into a barrel of water and gently swish the roots around. Inspect the roots of the plants for the tell-tale symptoms of RKN, i.e., galls on the fine and larger roots of a plant (Fig. 1b) vs uninfected roots being smooth and thin (Fig. 1a). At other times entire roots can become swollen and appear ‘lumpy’ and rotted with other roots being much thinner (Fig. 2).



Figure 2. Lumpy rotted roots of a cucumber plant caused by RKN infection

Root-knot nematodes start out as eggs that develop into J1 or first-stage juveniles, when J1s molt they become J2 nematodes. The J2 stage is mobile and is the only stage that can start infections. They attack the root tips and enter roots behind the root cap where they initiate a feeding site by injecting secretions that cause the cells to greatly enlarge. The male RKNs eventually leave the roots, but the females stay in the root and lay their eggs in a jelly-like mass that reaches into the soil.

Soil fumigants or nematicides can be effective in reducing RKN damage to vegetable roots, but they will not eliminate the pest from the soil and populations will still be high at the end of the season, but roots will be protected long enough for a crop to be produced. More information on fumigants and nematicides can be found in the [2020-2021 Mid-Atlantic Commercial Vegetable Production Recommendations](#) guide.

There are other options that can be used to reduce RKN populations. One of these options is using certain cover crops that can decrease RKN severity and crop damage. Rapeseed (relative of canola) is one of these cover crops that is planted in late September early October in Maryland at 800,000-900,000 seeds per acre and

letting it grow throughout the fall, winter and early spring and then tilling it under in mid-March through mid-April. Rapeseed crops have a high sulfur requirement, so be sure you have adequate levels of sulfur in your soils for this cover crop. The key is getting a good solid stand of the cover crop so that weeds do not grow along with the crop as many weed species can act as hosts for RKN.

In the summer a good cover crop to use is sorghum-sudangrass that can be planted following an early season vegetable crop such as cucumber, pea or snap bean. Planting seed at 200,000 seeds/a or 20 lbs/a in mid to late July produces enough biomass to reduce RKN populations. For best control, the sorghum-sudangrass crop should be chopped while green into smaller pieces and incorporated into the soil by mid-October. Well incorporated sorghum-sudangrass can be as effective as fumigation. Adding poultry litter or poultry litter compost into the sorghum-sudangrass biomass produces the most effective reduction in nematodes.

Agronomic Crops

Agronomic Crop Insect Scouting - David Owens, Extension Entomologist,
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Soybean

Check any double crop field that was treated for corn earworm for soybean looper. Large populations were observed this week in southern Sussex. Soybean can handle more defoliation in the R6 stage, but if we go above the 20-30% range, treating may still be justified. The loopers observed were small, and defoliation was very low. I suspect that loopers are not going to be happy this week with cool weather and natural enemy activity, but keep an eye on them. Some isolated spots of corn earworm are reappearing in soybean, mostly early instars. R6 beans are still susceptible to CEW damage. Wait and see if the worms develop though. Mortality is going to be fairly high in the early instars and may be high enough to not require a treatment.

While looking for loopers and earworm, check for stink bugs. Once soybeans reach the R7 stage, treatment for stink bug is not necessary.

End of Season Rainfall and Temperature

Summary - Jarrod O. Miller, Extension Agronomist, jarrod@udel.edu

All corn fields planted between mid-April and late May should have accumulated enough growing degree days to reach blacklayer at this point. Mid-April corn should have reached blacklayer the last week of August, while late May plantings should have only needed 7-10 days longer. The colder weather in late April and Early May (Figure 1) slowed down early accumulation of heat units so that late May planting wasn't too far behind. We saw a similar event in 2019

(<https://sites.udel.edu/weeklycropupdate/?p=14264>), with the second week of May having temperatures in the low 40s. This year, we had very large fluctuations in temperature in April and May, with steady, but hot temperatures throughout July during pollination (Figure 1).

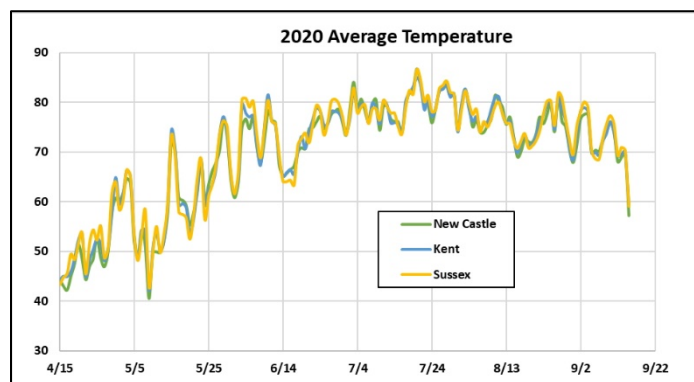


Figure 1. Average daily temperature during the corn growing season for the three Delaware counties.

We had more consistent rainfall in 2019 as well, with a lack of precipitation not occurring until the second week of June

(<https://sites.udel.edu/weeklycropupdate/?p=14264>). This year, our Newark research farm received no rainfall between late May and late June, and only caught up to last year's total with the rainfall in late August (Figure 2). The worst drought period in Sussex occurred in early July, when many fields were starting to

pollinate. Both Sussex and New Castle county sites accumulated 22 inches of rainfall between April and September 15th, but it was lacking during critical early growth stages of corn and soybeans, so fields without irrigation may suffer. The bright side is that many storms bypass Georgetown altogether, so many fields may have been luckier than us. Between April 15 and September 15th, Kent County (Dover AFB) received 32 inches of rain, with a large portion occurring during the tropical storm. So although the total is high, it is unlikely much of it infiltrated our soils, and either ponded or ran off the fields. Good luck with your corn harvest!

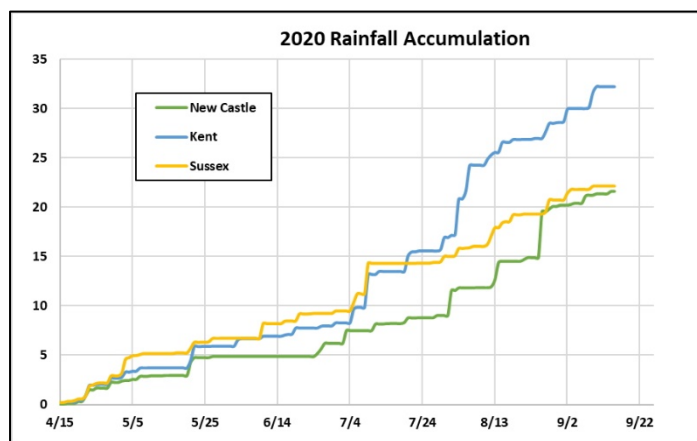


Figure 2. Season-long rainfall accumulation for the three Delaware counties.

General

Guess the Pest! Week 24 Answer: Henbit -
David Owens, Extension Entomologist,
owensd@udel.edu

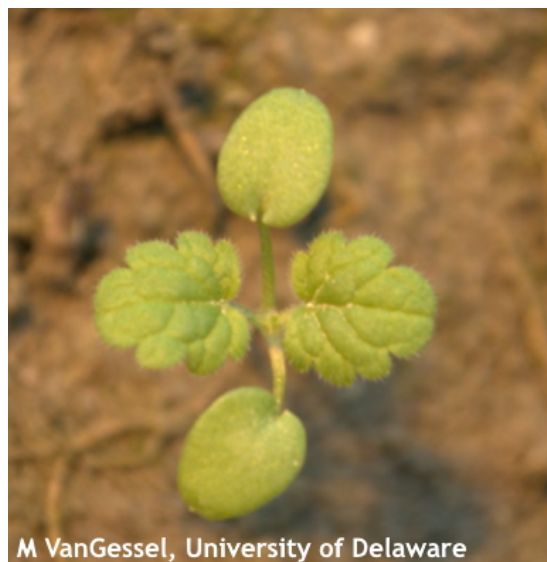
Congratulations to Jacob Urian and to all others who correctly identified the weed from last week as henbit.

This from Mark VanGessel:

Henbit (*Lamium amplexicaule*) is a winter annual weed in the mint family and has square stems. It emerges in late summer and throughout the fall and into early spring. It is one of the first plants to flower in the spring (early March) and has distinctive purple flowers. A survey of over 60 small grain fields, found it in 56 of the fields. While it is a low growing plant, it can be found at significant densities to reduce small grain

yields. It is also a challenge to fall establishment of pastures and hayfields.

Our research has shown control in small grains is best achieved with postemergence herbicides in late October through November. Cereal rye cover crops are effective at suppressing the growth of henbit.



M VanGessel, University of Delaware



M VanGessel, University of Delaware

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

This is the last Guess the Pest edition for the season, but that does not mean you can relax on the pests. There are still plenty of insects, weeds, and diseases to watch out for in fruit,

vegetable, and field crops between now and next season. Many thanks to all of the Extension specialists who contributed this season.

When assessing soybean maturity, we see some pods that look like this. What happened here?



https://docs.google.com/forms/d/e/1FAIpQLSfUPYLZnTRsol46hXmggj8fvt5f8-JI0eEUHb3QJaNDLG_4kg/viewform?c=0&w=1



Announcements

Website Consolidates Delaware Nutrient Management Recommendations

Looking for nutrient recommendations for Delaware crops? Now you can find them all in one place! Check out our new website that houses all nutrient recommendations including agronomic crops, forage, hay and pasture crops, and miscellaneous crops (includes hemp, malting barley, and wildlife plots).

Note: Turfgrass, ornamentals, and nursery stock

recommendations are coming soon. Is there a crop you would like to see on this site? Email ashober@udel.edu and let us know!

<https://www.udel.edu/academics/colleges/canr/cooperative-extension/environmental-stewardship/soil-testing/nutrient-recommendations/>

Extension302 Podcast

Episode 8: Optimize your health during quarantine!

Have you stopped working out and eating well during quarantine? UD Family and Consumer Science Extension Agents, Gina Crist and Diane Oliver, share their tips and tricks to maintaining your health when your usual routine is disrupted.

To listen, go to:

<https://www.udel.edu/academics/colleges/canr/cooperative-extension/about/podcast/>



Future Harvest Beginner Farmer Training Program Accepting Applications

Future Harvest is now accepting applications for its 2021 [Beginner Farmer Training Program \(BFTP\)](#) which provides free, year-long training in sustainable agriculture to the next generation of Chesapeake region farmers.

The [Beginner Farmer Training Program](#) combines a comprehensive classroom curriculum with hands-on learning at some of the region's most successful farms that employ practices that are profitable, protect land and water, and build healthy communities. It offers three tailored levels of training designed to meet the needs of beginning farmers at different stages in their careers, from entry-level to advanced. Each level is designed with scheduling flexibility to allow new farmers to further their training while maintaining their own farms or other work, and to facilitate the need for one-on-one guidance and mentorship. The program serves new farmers in urban, suburban, and rural

settings, across the Chesapeake region: MD, VA, DC, WV, and DE.

To make the program accessible to a broad range of aspiring farmers, enrollment in the BFTP is free. Trainees receive a host of additional benefits: a complimentary annual [Future Harvest membership](#) and free access to [field days](#) throughout the year, online and in-person classroom series, and admission to the organization's [annual winter conference](#).

The deadline for applications is Friday, October 16, 2020. There are a limited number of spots available (due to 2020 trainees returning to complete programming that was interrupted by Covid), so applicants are encouraged to include as much detailed information about themselves and their farming interests and experiences as possible.

Further application information can be found at www.futureharvestcasa.org. For questions about the program or application process, please contact BFTP Director, Sarah Sohn: sarah@futureharvestcasa.org

Webinar: Lessons Learned in Covid-19 Prevention Efforts among Agriculture Workers and Employers

Tuesday, September 22, 2020 Online

Agriculture work sites, shared worker housing, and shared worker transportation vehicles present unique challenges for preventing and controlling the spread of COVID-19. Consistent application of specific preparation, prevention, and management measures can help reduce the risk of spreading COVID-19. Best practices in Covid-19 testing and contact training will be shared to help agricultural producers identify strategies for responding on their farm. The CDC Covid-19 prevention guidance for agriculture will also be shared to assist employers in adopting recommendations to protect workers.

Intended Audience: Agricultural employers, farm workers, farmers, ranchers, agribusiness, and other Ag safety and health professionals

Objectives: At the end of the presentation, participants will be able to gain an understanding of:

- current CDC/OSHA guidelines for COVID-19 prevention in the agriculture industry
- airborne transmission characteristics of SARS-Cov-2

- the principles of testing for infectious diseases
- the difference between the various tests currently available for SARS-COV-2
- COVID19 contact tracing protocols

Presenters:

Charles L. Hyman, MD Attending Physician, Infectious Diseases, Bassett Healthcare, Cooperstown, NY

Jennifer M. Lincoln, PhD, CSP, CAPT (retired), US Public Health Service, Associate Director, Office of Agriculture Safety and Health, National Institute for Occupational Safety and Health

Douglas Trout, MD, MHS, Chief, Hazard Evaluations and Technical Assistance Branch, National Institute for Occupational Safety and Health

Chad Roy, Ph.D., M.S.P.H.. Director, Infectious Disease Aerobiology, Director, Biodefense Research Programs, Tulane National Primate Research Center and Professor of Microbiology & Immunology, Tulane School of Medicine

Natalie Roy, MPH Executive Director, AgriSafe Network

[Register Online](#)

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of September 10 to September 16, 2020

Rainfall:

0.30 inch: September 10

0.02 inch: September 11

Air Temperature:

Highs ranged from 84°F on September 10 to 69°F on September 15.

Lows ranged from 74°F on September 10 to 48°F on September 16.

Soil Temperature:

74.8°F average

Additional Delaware weather data is available at <http://www.deos.udel.edu/data/>

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

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