



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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July 11, 2014

Vegetable Crops

Vegetable Crop Insects - Joanne Whalen,
Extension IPM Specialist; jwhalen@udel.edu

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. ***Be sure to read all labels carefully for rates and restrictions since some materials, especially miticides, are restricted to only one application as well as ground application only.***

Lima Beans

Be sure to scout fields for leafhoppers, spider mites, plant bugs and stink bugs. As soon as pin pods are present, be sure to watch carefully for plant bug and stinkbug adults and nymphs. As a general guideline, treatment should be considered if you find 15 adults and/or nymphs per 50 sweeps. The higher rates of labeled products will be needed if stinkbugs are the predominant insect present.

Peppers

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 visit our website at <http://agdev.anr.udel.edu/trap/trap.php> . At this time, you will also need to consider a treatment for pepper maggot. The first beet armyworms (BAW) have also been detected -

chemical selection is important once this insect is found in peppers. Be sure to select a material that also has BAW control on the label.

Potatoes

Continue to scout fields for Colorado potato beetle, leafhoppers, and aphids. Controls will be needed for green peach aphids if you find 2 aphids per leaf during bloom and 4 aphids per leaf post bloom. This threshold increases to 10 per leaf at 2 weeks from vine death/kill. If melon aphids are found, the threshold should be reduced by half.

Snap Beans

Continue to sample all seedling stage fields for leafhopper and thrips activity. As a general guideline, corn borer sprays are needed at the bud and pin stages on processing beans. Additional sprays may be needed after the pin spray on processing beans for corn borer and corn earworm. Since trap catches can change quickly, be sure to check our website for the most recent trap catches and information on how to use this information to make a treatment decision in processing snap beans after bloom.

After the pin spray on processing beans, the spray schedule will be determined by a combination of both moth catches and field scouting.

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

<http://extension.udel.edu/ag/insect-management/insect-trapping-program/ecb-and->

[cew-moth-catch-thresholds-for-processing-snap-beans/](#)

Sweet Corn

Continue to sample all fields through pre-tassel stage for whorl feeders (corn borer, corn earworm and fall armyworm). A treatment should be applied if 12- 15% of the plants are infested with larvae (regardless of the species). The predominant whorl feeder being found at this time is the fall armyworm. Since fall armyworm (FAW) feed deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control. FAW can also be a problem in silk stage sweet corn, especially in outbreak years. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible. Be sure to check both blacklight and pheromone trap catches since the spray schedules can quickly change. Trap catches are generally updated on Tuesday and Friday mornings on our website (<http://agdev.anr.udel.edu/trap/trap.php>) and the Crop Pest Hotline (302-831-8851). Information on scouting sweet corn and how to use the trap catch information can be found at <http://extension.udel.edu/ag/insect-management/insect-trapping-program/action-thresholds-for-silk-stage-sweet-corn/>.

Squash Vine Borers and Squash Bugs Very Active This Year - Jerry Brust, IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu

On several farms I have visited lately with squash I was surprised to see several wilted plants (Fig. 1) that upon further inspection had squash vine borers. Some of these squash plants were pretty young with the base of the plants being $\leq \frac{1}{2}$ inch in diameter, but there was one small entrance hole (Fig. 2) and one squash vine borer in the base of the stem (Fig> 3). Usually the plants need to be older and have a larger base to support borers. The vine borer over winters in the same field where they attacked plants the year before; therefore crop rotation is a good management tactic. Adults emerge sometime in mid to late June, mate and females begin to lay eggs. Most of the eggs she lays (78%) will be laid at the base of a squash or pumpkin

plant. Once larvae are in the stem nothing will control them—systemic insecticides will not work at this point and heaping soil at the base of the plant will not work. On several of the farms I saw female moths; they are day flyers, flying in and around squash plants. The moths lay eggs over a 4-6 week period, if you have SQVB moths you'll need to protect the base of your squash or pumpkin plants from now until early August.



Figure 1. Wilted squash plant



Figure 2. Squash vine borer larva entrance hole in stem (arrow)



Figure 3. Squash vine borer larva with brown head capsule

The other problem that I commonly saw in these cucurbit fields was squash and pumpkin leaves with a great many squash bug eggs (Fig. 4). I usually do not see this density of eggs until late August or early September. The squash bug adults were usually found at the base of the plant where they feed and mate (Fig. 5). It would be a good idea to mark a few egg masses and when you observe them hatching in the next week or so you could time your sprays better—small nymphs are much easier to kill than large ones.



Figure 4. Two sets of squash bug eggs on underside of pumpkin leaf



Figure 5. Three squash bug adults at base of plant (arrows)

Tomato and Blossom End Rot - Jerry Brust, *IPM Vegetable Specialist, University of Maryland*; jbrust@umd.edu

This is just a reminder that with the peculiar weather we have had lately blossom end rot can become a real problem in tomatoes. The stretches of very high temperatures and then warm days with ‘cool’ nights (like we had over the 4th of July holiday) and mixed with the very heavy down pours we have had over the last few weeks will be conducive to development of this physiological disorder. The sunny days with low humidity will suck water through a plant quickly and the downpours will disrupt calcium movement through the plant. The key is to try to maintain consistent soil moisture while the fruit is developing. Easier said than done I know, but soil moisture levels need to be monitored as best as they can. When you see something like Figure 1, with all the tomatoes on a cluster with blossom end rot you know the soil moisture fluctuated greatly over a period of time. Applying some foliar calcium sprays will help, but the applications can’t overcome poor soil moisture management.



Figure 1. All the tomatoes on this one cluster have blossom end rot—indicating poor soil moisture management

Potato Disease Advisory #9 - July 11, 2014

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

Date	DSV	Total DSV	Accumulated P-Days	Recommended Spray Interval
5/21-5/23	2	21	100	10-days
5/23-5/30	16	37	157	5-days
5/30-6/6	6	43	207	10-days
6/6-6/13	21	64	280	5-days
6/13-6/19	5	69	329	10-days
6/19-6/27	6	75	398	10-days
6/27-7/4	4	79	446	10-days
7/5-7/11	3	82	492	10-days

*Red text indicates that a preventative fungicide application is recommended. Fungicides are most effective if applied prior to disease development. Follow all label directions regarding application methods, etc. Remember that the label is the law.

Location: Leipsic, Kent Count, Delaware

Green row: May 12, 2013

Any suspect samples can be sent to the UD Plant Diagnostic Lab or dropped off at your local Extension office. See the 2014 Commercial Vegetable Production Recommendations-

Delaware for recommended fungicides: <http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/>.

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

Fruit Crops

Spotted Wing Drosophila Update - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

The first Spotted Wing Drosophila (SWD) adults were found in traps in Kent and Sussex counties this past week. Unfortunately, there are no thresholds available based on trap catches. These first detections do mean that small fruit growers (especially bramble and blueberry growers) will need to maintain their spray schedules for this very damaging insect pest. We have also started sampling blueberry fruit for larvae, and so far none have been detected. Information from surrounding states indicate that population levels are still low but starting to increase. For more information on management of SWD in fruit, you will want to consider the following resources:

Rutgers Plant Pest Advisory - <http://plant-pest-advisory.rutgers.edu/category/fruit/small-fruit/>

Michigan State - http://www.ipm.msu.edu/invasive_species/spot_ted_wing_drosophila

Virginia Tech - <http://www.virginiafruit.ento.vt.edu/SWD.html>

Agronomic Crops

Agronomic Crop Insects - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Alfalfa

Continue to sample for potato leafhoppers on a weekly basis. 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

As fields begin to silk, the two most common insects being found are Japanese beetles and brown stink bugs. The following are general guidelines for management of these two insect pests in silk stage field corn:

(a) Japanese Beetle - Treatment may be needed if silks are clipped back to less than ½ inch before 50% pollination and beetles are present and actively feeding. Pollen shed for an individual tassel generally takes 2-7 days to complete and 1-2 weeks for an entire field (information from Bob Nielson, Purdue University).

(b) Stink Bugs - During the pollination to blister stages, stink bugs can feed through the husk and damage individual kernels. Although we do not have thresholds for our area, information developed in states to our south can be used to make a treatment decision. From the end of pollen shed to blister/milk stage, the threshold used in the South is one stink bug for every two plants (50% infested plants). Please refer to the following link for more information on stink bug management in field corn
<http://entomology.ces.ncsu.edu/2014/07/stink-bugs-in-corn/>.

Soybeans

We continue to find a variety of defoliators in soybean fields including grasshoppers, green cloverworm, silver spotted skipper, oriental beetles and Japanese beetles. In general, a treatment decision should be based on percent defoliation. Before bloom, the defoliation threshold in full season soybeans is 30% defoliation. Once fields reach the bloom stage, this threshold decreases to 15% defoliation. Spider mites and thrips are also present in fields. Although no precise thresholds are available for thrips, as a general guideline, treatment may be needed if you find 4-8 thrips per leaflet and plant damage is observed. Although spider mite populations can start on field edges, we continue to find hot spots of activity in field

interiors so be sure to scout the entire field to make a treatment decision. Early detection and control is needed for spider mite management.

At this time last year, we had found our first Kudzu bug adults in soybeans. So far this season, we have not found any Kudzu bugs on kudzu patches or in soybeans in our surveys. The preliminary early-season threshold used in the south is 5 bugs per seedling through mid-July. They still indicate that the most important time to control this insect is when the first nymphs are detected, so looking for egg masses will be important as well. In North Carolina and other states to our south, they are using the established threshold of one nymph per sweep (one swoosh of the net) once they reach mid-July. You should go to <http://soybeans.ces.ncsu.edu/2014/06/early-season-kudzu-bug-management/> or <http://www.kudzubug.org/> for more information on identification and management.

Diseases in Soybeans - *Nathan Kleczewski, Extension Specialist - Plant Pathology;*
nkleczew@udel.edu

There is a typical rogue's gallery of diseases currently in soybean fields. We are seeing the Septoria brown spot in many fields. This is a residue-borne disease that tends to hang out in the lower canopy. In cases where more than 25% of the canopy is defoliated by R3 you may see some yield loss, but there is little information on how often this occurs in the Mid-Atlantic, particularly in irrigated and double crop soybeans.

A disease that can be confused with Septoria leaf spot is bacterial blight. This also is a residue-borne disease that can cause lesions on foliage. Lesions may occur around the leaf edges and tend to follow the veins. As lesions age they can fall from the leaf, giving the canopy a tattered appearance. Unlike Septoria brown spot, bacterial blight can also be found in the upper canopy. This isn't typically a yield-limiting disease and control is not warranted.



A soybean plant with early symptoms of bacterial blight. In later stages the foliage may develop a tattered appearance.

In some fields that are further along I have noticed downy mildew. This can be residue or seed-borne and can also spread over large distances on air currents. Again, this is not considered to be a yield-limiting disease, but last year levels across several states were significantly greater than usual. Fungicides for downy mildew control aren't typically recommended.



The upper surface of a soybean leaf with downy mildew. On the underside of the leaf grey/white fuzzy masses are often observed. Lesions can expand and turn grey over time.

You also may see two different causes of lesions with red borders and cream/white-colored centers: herbicide damage or Frogeye leaf spot. The use of herbicides with PPO modes of action (e.g. Reflex) can sometimes produce whitish lesions with red borders. Affected leaves may also be crinkled. New tissues will be free of symptoms. In addition, the entire field is likely to be even in terms of symptomology. With Frogeye leaf spot you can see similar lesions, but leaves will not be puckered. If the leaf is flipped over you should be able to see a black/brown structure and if you are lucky some fuzzy, silvery growth. Lesions might be present on newly

developed tissue and the disease may be less uniform throughout the field. If frogeye leaf spot is present at significant levels at R1 then a spray may help reduce severity. This disease seldom builds to levels that necessitate treatment, but if it is present in a field, that field should be carefully scouted.



Soybeans with herbicide damage to lower tissues. Notice that the new tissues are asymptomatic and the puckering of affected leaves.



A soybean field with Frogeye leaf spot. Notice the lack of foliar puckering and the presence of lesions on the upper, young tissues. The

presence of fungal structures and tissues may be observed on the undersides of lesions, particularly under humid conditions.

We also are looking for symptoms of soybean vein necrosis virus this year in a project funded by the Delaware Soybean Board. Symptoms may be appearing in some fields in the near future. This is a fairly new disease and currently we are determining how widespread it is and what factors may be associated with increased levels of the disease in fields. If you do see symptoms characteristic of this virus feel free to contact me and I'd be more than happy to collect samples for confirmation.



A soybean with symptoms characteristic of early soybean vein necrosis virus (SVNV).

A Note on Below Label Rate Fungicide Use

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

Research across the nation has shown that fungicides have the greatest potential to increase corn yields when applied to a susceptible hybrid under conditions that favor a disease epidemic. The rates provided have been shown through years of research to provide effective control of the pathogens listed on the label. In addition, rates are chosen that reduce the risk of fungicide resistance development; if a product is applied at below labeled rates it increases the likelihood for resistant individuals to survive and reproduce. There are many

examples of fungal pathogens developing resistance to fungicides. For example, populations of the pathogen that causes frogeye leaf spot are now resistant to products that contain a group 11 (strobilurin) mode of action in several Southern and Midwestern states, greatly limiting the products growers can use to manage this disease. I encourage anyone applying fungicides to follow the label to ensure that these important disease tools remain effective for years to come and to ensure product effectiveness during the growing season.

Announcements

Field Day: Diagnosing Soybean Production Issues

Tuesday, August 12, 2014

University of Delaware

Carvel Research and Education Center

16483 County Seat Hwy

Georgetown, DE

The Delaware Soybean Board and University of Delaware Extension are cooperating on a field day designed to improve diagnostic skills and help troubleshoot production problems in the field. The Field Day will start in the late afternoon (exact time not yet set) and dinner will be provided.

There is no cost to attend but please RSVP by August 5 to Karen Adams at (302) 856-7303 ext 540 or adams@udel.edu.

A Day in the Garden—Open House

Saturday, July 12, 2014 10 a.m. - 2 p.m.

Sussex County Extension Office

16483 County Seat Hwy.

Georgetown, DE 19947

(Rain or Shine)

100th Anniversary Celebration for Cooperative Extension—Door Prizes, Miniature Garden display, Bonsai display, Ask an Expert—bring your plant problems to us for advice and enjoy other special activities. Bring your camera! Visit our website and view our YouTube invitation at <http://www.rec.udel.edu/> or contact Tammy Schirmer at 302-856-7303 or tammys@udel.edu for more information.

Mini-Workshops include:

10:00 am - **Making Garden Signs.** A demo on making small garden signs from materials that you can find at home. Come see how easy it is to add interest in your own garden. By Lana Ward

10:30 am - **The Misadventures of Peter Rabbit in Farmer McGregor's Garden.** By Master Gardener Cast

11:00 am - **Making Stepping Stones.** Learn how to make stones that are fun, fast and economical using a real leaf from the garden and concrete. Easy to do and made from natural garden leaves. By Lisa Arni

11:30 am - **Insect Safari.** See bugs, bees, butterflies, and other lively creatures as we tour our Demonstration Garden. You just have to look! By Brent Marsh

12:00 pm - **How to Garden Working with Nature.** We will discuss using native plants and organic and chemical-free gardening, to attract birds, beneficial insects, and other wildlife to your yard. By Mary Hall and Cece Niemi

12:30 pm - **The Misadventures of Peter Rabbit in Farmer McGregor's Garden.** By Master Gardener Cast

1:00 pm - **What's Eating my Garden?** IPM Expert, Brain Kunkel, will lead a tour of the grounds to show you firsthand beneficial insects working in the garden along with pests that many are experiencing in their own garden this year. Find out what you can do in your landscape.

The famous ice cream from the UDairy Creamery will be available at the Open House via the Moo Mobile - 10 flavors! <http://ag.udel.edu/creamery/>

Advanced Training on Hot Water Seed Treatment

Monday, July 28, 2014 from 9:00-11:00 a.m.
Paradee Center
69 Transportation Circle Dover DE 19901

Hot Water Seed Treatment is a cultural practice that prevents disease causing organisms to be carried within or on the seed. Seed Treatment can also be useful to reduce the amount pesticide needed to

manage your crops. This is especially important for tomato and pepper seeds. If you save seeds each year, you should definitely attend this workshop.

Dr. Gordon Johnson will be presenting this interactive workshop to educate the participants on the correct way to disinfect seeds.

Please RSVP to Megan Pleasanton at 302-857-6438 if you wish to attend.

Mid-Atlantic Precision Agriculture Equipment Day

Wednesday, August 6 8:30 a.m. – 3:30 p.m.
Wye Research & Education Center
124 Wye Narrows Drive
Queenstown, MD 21658

Please join us and learn how to make precision agriculture pay in your operation. Practical and informative advice will be given on the hottest topics in precision agriculture equipment to **maximize profits and efficiency**. Come learn from some of the top, nationally recognized speakers in **agriculture equipment and machinery engineering**.

FEATURED SPEAKERS INCLUDE:

Joe Luck
University of Nebraska-Lincoln

John Nowatzki
North Dakota State University

TOPICS INCLUDE:

- Managing your precision ag data
- Unmanned Aerial Systems (drones) in agriculture
- Local precision ag implementation and challenges

DE and MD Nutrient Management Credits & CCA credits will be available. Lunch will be available free of charge thanks to the generous sponsorship.

Register at: <http://enst.umd.edu/extension/mid-atlantic-precision-ag-day>

For more information contact Jennifer Rhodes: jrhodes@umd.edu or (410) 758-0166

**Association of Specialty Cut Flower
Growers Conference:
“Growing Growers”**
October 19-22, 2014
Hilton Wilmington/Christiana
100 Continental Drive
Newark, DE 19713

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Additional conference information at:

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&task=view&id=503&Itemid=1014](http://www.ascfg.org/index.php?option=com_content&task=view&id=503&Itemid=1014)

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of July 3 to July 9, 2014

Readings Taken from Midnight to Midnight

Rainfall:

2.76 inch: July 4

0.14 inch: July 9

Air Temperature:

Highs ranged from 93°F on July 3 to 78°F on July 4.

Lows ranged from 74°F on July 8 to 58°F on July 5 and July 6.

Soil Temperature:

79.1°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
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Crops**

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