WEEKLY CROP UPDATE
UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

**Volume 24, Issue 23** **August 26, 2016**

# Vegetable Crops

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

**Cole Crops**
Continue to sample for cabbage looper, diamondback larvae, beet and fall armyworms and Harlequin bug. Although the pyrethroids will provide control of Harlequin bugs they are not effective on beet armyworm or diamondback. Be sure to scout and select controls options based on the complex of insects present in the field.

**Lima Beans**
Continue to scout for stink bugs, lygus bugs, and corn earworm. A treatment will be needed if you find one corn earworm larvae per 6 ft-of-row. Soybean loopers have been detected in a few fields. Remember that they are a migratory pest, difficult to control and pyrethroid resistance has been documented in states to our south. If they are present in the mix, you will need to select a material labeled for soybean loopers. Be sure to check the label for rates, restrictions (including plant back/rotational crop restrictions) and days from last application to harvest.

**Peppers**
At this time of year, corn borer, corn earworm, beet armyworm and fall armyworm are all potential problems in peppers. Be sure to select the material that will control the complex of insects present in the field. Be sure to check local corn borer and corn earworm moth catches in your area by calling the Crop Pest Hotline (302-831-8851) or our webpage at http://agdev.anr.udel.edu/trap/trap.php.We are starting to see aphid populations increasing, especially in fields where pyrethroids have been used on a weekly basis. Labeled materials are only effective if applied before populations explode.

**Snap Beans**
At this time, you will need to consider a treatment for both corn borer and corn earworm. You should also watch for beet armyworms and soybean loopers. Sprays are needed at the bud and pin stages on processing beans for worm control. With the diversity of worm pests that may be present in fields, be sure to scout fields and select materials that will control the complex of insects present. You will need to call the Crop Pest Hotline (302-831-8851) or check our website for the most recent trap catches to help decide on the spray interval between the pin stage and harvest for processing snap beans

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**
The first silk sprays will be needed 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/.

## Other Fruit Problems with the 2016 Tomato Crop

– *Jerry Brust, IPM Vegetable Specialist, University of Maryland*; jbrust@umd.edu

Last week I commented about not seeing much yellow shoulders or uneven fruit ripening problems caused by low levels of potassium in tomato. The lack of problems was due mostly to higher than normal potassium levels in the tomato crop. I heard from several growers who told me that their tomato harvests were not pretty and they sent pictures along to prove that. And I agree that some of our tomatoes look pretty ugly and this is what I'd like to talk about this week.

Some of the ugliness is due to high levels of gold fleck (Figure 1). Gold fleck is caused by calcium crystals being deposited in the epidermal layers of the fruit when certain varieties are under stress. Causes of this stress include high densities of thrips or moderately high numbers of two-spotted spider mites or most commonly when there are consistently high (≥90°F day, >68°F night) air temperatures along with high dew points (≥68°F). We all experienced these high temperature and humidity conditions, but some fields also had high levels of mites or thrips, making matters even worse.

In some fields I found a great deal of rain-check (Figure 2). Rain check occurs in green and partially ripe fruit when there is rapid fruit growth and the skin can't expand fast enough. This often occurs when there has been a dry period with high humidity followed by heavy rains. Fruit that has poor foliage cover tends to have more problems with the disorder. These conditions cause small, or, at times, large cracks up around the stem that can expand over time (Figure 2).

Figure 1. Severe gold fleck in tomato

Figure 2. Rain check on tomato

There are ways to reduce the physiological disorders just discussed as well as yellow shoulders and other fruit ripening problems. Selecting some varieties that do well in heat is one, but these often have other undesirable attributes that growers and their customers do not want. Another is using white plastic mulch (Figure 3) rather than black mulch, which will REDUCE the amount of these disorders but they will still occur and the mulch must be put down early in the season. But one way to reduce many of these physiological disorders is by using shade cloths or canopies (Figure 4). These shade cloths can be put up after the first cluster or two of fruit have set if weather conditions indicate prolonged periods of hot humid weather.

Figure 3. White plastic mulch

Figure 4. Shade cloth over a section of tomato row

I have been experimenting with using shade cloth in tomato over the last 5 years and they have worked remarkably well in increasing the marketable yields of many different cultivars of tomatoes by 20-50%. I use a 30% filtering shade (using any more than 30% tends to reduce yields and size of tomato fruit). The shade cloth is draped over the top of the tomato stakes and held down at both ends (Figure 4). I know this does not seem practical, but only the top ¼ of the plant needs to be covered (not shown) which means a grower could use shade cloth with a 4 ft width and as long as they wanted it to be. The shades can be used over and over for many years; the ones I am using have been in use now for 5 years. The shade cloth helps tomato plants come through very stressful weather conditions, i.e., high temperatures with high dew points and even heavy rains in much better shape than plants that were not covered.

Figure 5 shows part of a row (with the red line) that had been covered with shade cloth for six weeks compared with the row next to it which had not - same cultivar planted on the same day. I arbitrarily selected that one section of row for the shade cloth in June. You can see how much better those plants that were covered look than the ones that were not covered. The benefit of using the shades is an increase in quality and size of tomato fruit, rarely in the number of fruit.

Figure 5. Part of tomato row (with red line) that was covered with shade cloth vs others that were not

Figure 6 shows harvest bins of tomato fruit with the bin on the left from plants that were covered from the end of June through July while the bin on the right was from plants (same cultivar) not covered. These experiments were replicated 4, 6, and even 8 times in the field over several years and the results were always the same - an increase in marketable yield each year. Some years it was an 18.9% increase and some years it was a 47.7% increase. Once plants are covered, the shade cloth can stay on the rest of the season until harvest. We sprayed through the shade cloth with fungicides and insecticides. Foliar diseases were reduced for plants under shade compared with plants outside shade. I am not suggesting a grower would shade an entire field, but you might select a few of your cultivars that bring a very good price, but are prone to producing ugly tomatoes during stressful weather conditions and shade those.

Figure 6. Harvest bins of tomato fruit; bin on left from plants covered with shade and bin on right from plants that were not covered.

# Fruit Crops

**Extending Your Strawberry Season with Day-Neutral Varieties** – *Gordon Johnson, Extension Vegetable & Fruit Specialist;* gcjohn@udel.edu

Plasticulture strawberry planting season is quickly approaching. Growers seeking to extend their strawberry seasons should consider planting a portion of their area to day-neutral varieties. Day-neutral strawberries start fruiting 12-14 weeks after planting and have the potential to give late fall as well as early April through July production. Currently, the three varieties that have shown the most potential for extended production on Delmarva are Seascape, San Andreas, and Albion.

Albion, in particular, has shown great flexibility for season extension. It is very flexible on when it is planted in the late summer or early fall. August plantings will yield some late fall production, particularly in high tunnels. While much less productive in the main Chandler season in the spring, it has some unique properties that make it valuable to growers. First, it will give some early production, ahead of Chandler. Second, even though production is lower, it produces evenly over an extended period of time from April through early July. In general it will give 5-6 weeks more production than Chandler. It is a large, firm berry that, while not as sweet early in the season, has good quality in May and June. Because plants are smaller and there are fewer berries per plant, it should be planted at a higher density than Chandler. Research has shown that planting three rows per plasticulture bed with two drip tapes provides the best yields.

Early August plantings of San Andreas will yield more fall production than Albion and San Andreas has comparable yields to Chandler in the spring with continued production through June. Both Albion and San Andreas have good quality and are firm berries that will stand up to regional shipping.

Seascape has been around for a long time and was the first of the larger sized day-neutral berries to show commercial potential in our area; however, Seascape has a softer berry and does not ship well so is best adapted to U-pick and local sales. Some grower in the region have had luck growing Seascape with multiple spring plantings spaced about three weeks apart from March through June giving summer and fall sales. Both Albion and San Andreas can also be planted in the spring for extended summer sales. Production in the heat of July and August will decline or stop unless there is a cool summer.

Because these day-neutral varieties keep blooming throughout the season, it is critical to maintain fertility, particularly with nitrogen, potassium, and calcium through fertigation. Over-fertilization with nitrogen will produce excess runners that will have to be removed and that will reduce productivity and under-fertilization with nitrogen will also limit production. Disease management is also critical because these varieties bloom for an extended season. Gray mold fungicide sprays must be applied regularly throughout the extended seasons.

# Agronomic Crops

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

**Soybeans**

We continue to find a variety of defoliating insects in soybeans. Although green cloverworm populations remain high in some fields, we are

also seeing a large number of moths in fields indicating larvae have pupated and a new population of egg laying moths can be found in fields. A new hatch of small grasshoppers can also be found in many fields, both full season and double crop fields. As a reminder, in addition to defoliation, grasshoppers and bean leaf beetles being found now can feed on and/or scar pods. In general, pyrethroids will provide control of the general complex of defoliators present (green cloverworm, cabbage loopers, grasshoppers, and bean leaf beetles).

However, soybean loopers and beet armyworm (also present in fields) are not effectively controlled by the pyrethroids. So knowing what species is present will be needed to make an insecticide selection. Materials labeled for soybean loopers and beet armyworm including Besiege, Blackhawk, Coragen (***NOTE – Prevathon is not labeled in DE***) Radiant or Steward will be needed. The highest labeled rate is generally needed for soybean looper and beet armyworm control.

Continue to watch for stink bugs in all fields during the pod development and pod fill stages. We continue to see an increase in populations, especially green stink bugs. You will need to sample for both adults and nymphs when making a treatment decision. As a general guideline, we are using a new threshold in the Mid-Atlantic Region -- 5 stink bugs per 15 sweeps. This is the threshold for soybeans produced for grain. If you are producing soybeans for seed, the threshold is still 2.5 per 15 sweeps.

We continue to find corn earworm (CEW) larvae in both full season and double crop fields but populations remain low in most cases. With the recent increase in our CEW moth catches in pheromone traps and economic levels of larvae now being found in soybean fields on the Eastern Shore of VA, you will need to sample fields for this insect pest on a weekly basis. Although CEW populations have been lower the last 2 seasons, this is a more typical year where we will see hot spots of economic levels. Since population levels will vary from field to field, the only way to know if you have an economic level will be to scout all fields. Once pods are present, the best approach to making a decision on what threshold to use for corn earworm is to access the Corn Earworm Calculator developed at Virginia Tech (http://www.ipm.vt.edu/cew/) which estimates a threshold based on the actual treatment cost and bushel value you enter.

You should also follow what is happening in areas to our south related to CEW pyrethroid resistance. Most of the population we will see in soybeans will come from moths migrating from the south. (http://blogs.ext.vt.edu/ag-pest-advisory/author/herbert/). ***NOTE – not all materials mentioned in southern newsletters are labeled in Delaware so be sure to check both the federal and state labels before applying an insecticide.***

**Sorghum**

If you are following newsletters from my colleagues to the south, you are aware that there is a new aphid, the sugar cane aphid, that is moving our way and it can quickly cause significant damage in sorghum. It has been found in Virginia this season so be sure to check fields for this aphid. Sugarcane aphids are yellow and can be distinguished from other aphids in sorghum by the presence of black tailpipes on the tail (cornicles) and black feet below their yellow legs. These aphids will often infest entire fields, which is rare for our native aphids. If you suspect a sugar cane aphid infestation, be sure to contact us for confirmation.

In some years, we can see issues with insects causing economic damage in sorghum heads. The following decision making and management information is from my colleague at Virginia Tech, Dr. Ames Herbert.

"Sorghum is susceptible to several insect pests. Both stink bugs and corn earworm are highly attracted to the heads once seed begin to form and both feed directly on those seed. Later planted sorghum is especially attractive to these pests as late sorghum heads offer a nutritious food source when many other host crops are reaching a stage that is no longer preferred. We have seen sorghum heads in Virginia with large numbers of worms and severe head damage. We have also seen heads with stink bugs feeding. Growers should check all fields to determine if insecticide sprays are needed. The best and only efficient way to sample heads is to shake individual heads into a white 5 gallon bucket.

Worms and stink bugs show up well in these buckets and can be easily counted. Sample several heads throughout the field and determine the average number of stink bugs and worms per head. Thresholds taken from several other states are pretty consistent:

• Head worms (mostly corn earworm in Virginia): an average of 1- 2 worms per head during seed formation

• Stink bugs: 2-4 per head at seed milk stage; 4-8 per head during soft dough stage"

# Announcements

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

**9/14: Optimizing your Website for Google** - Learn quick tips to optimize your website or blog so that it ranks higher, and therefore more visible in Google searches and other search engines!

**9/28: SARE Farmer Grower Grants** - The goal of the USDA Northeast Sustainable Agriculture Research & Education (SARE) Farmer Grant program is to help farmers explore sustainable and innovative production and marketing practices, often through an experiment, trial, or on-farm demonstration. SARE defines sustainable practices as those that are profitable, environmentally sound, and beneficial to the wider farm community. This unique grant program funds a wide variety of on-farm projects, and has a simple application process geared towards farmers. This webinar will provide insight into this specific grant program including proposal guidelines, how to apply and tips on writing a good proposal. Note: Proposal deadlines are November 29 with awards announced in March. http://www.nesare.org/Grants/Get-a-Grant/Farmer-Grant

*To register:*
*http://www.eventbrite.com/e/wednesday-webinars-registration-11452674257*

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

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

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

### Farm Transfer Communication Webinar
### The Farm Whisperer
### by David Specht

Tuesday, November 29, 2016 7:00 p.m.

More details to follow.

*For more information - contact Dan Severson – severson@udel.edu or Laurie Wolinski – lgw@udel.edu.*

### New Concepts in Pasture and Grazing Management

Wednesday, September 7, 2016
9:00 a.m. – 4:00 p.m.
&
5:30 p.m. – 8:00 p.m.
University of Maryland Eastern Shore
Princess Anne, Maryland

**DAY SESSION**

9:00 a.m.
**Welcome**

9:15 a.m.
**Benefits of a Year-Round Rotational Grazing System and Improved Forage Varieties**
*Sheep & Goats—Dr. Enrique Nelson Escobar, UMES*
*Beef Cattle—Eddie Draper, Wye Angus Facility*
*Horses—Shannon Dill, UME*

10:00 a.m.
**Sericea Lespedeza and Bermudagrass—Promising New Forages for the Mid-Atlantic Region**
*Dr. Don Ball, Auburn University/Professor Emeritus*

11:00 a.m.
**Establishing and Managing Pasture for Increased Production and Improved Soil Health**
*Dr. Jarrod Miller, UME*

11:15 a.m.
**Break**

12 noon
**USDA Grazing Program Assistance**
*Dr. Terron Hillsman, USDA-NRCS*

12:30 p.m.
**Lunch**

1:00 p.m.
**Ways to Extend Grazing and Reduce Stored Feed Needs**
*Dr. Don Ball, Auburn University/Professor Emeritus*

2:00 p.m.
**Timelines for Planning a Year-Round Grazing System in the Mid-Atlantic Region**
*Dr. Les Vough, NRCS/Retired*

2:45 p.m.
**See it in Action! The UMES Year-Round Rotational Grazing Demonstration Project Pasture Walk**

4 p.m.
**Adjourn**

**EVENING SESSION**

5:30 p.m.
**Forage Profit Strategies**
*Dr. Don Ball, Auburn University/Professor Emeritus*

6:30 p.m.
**See it in Action! The UMES Year-Round Rotational Grazing Demonstration Project Pasture Walk**

8 p.m.
**Adjourn**

*To register, visit https://www.eventbrite.com/e/pasture-grazing-management-tickets-25299935789. The registration fee, which includes educational materials and lunch for the full day session, is $20 per person. The fee for the evening session is $5 per person.* ***The registration deadline is September 2.***

*For more information about the New Concepts in Pasture and Grazing Management Workshop, contact Michele Howard at 410-651-6070 or by email at mlhoward@umes.edu. Workshop sponsors include University of Maryland Extension and the University of Maryland Eastern Shore Small Farm Outreach Program.*

## Feeding America – Your Next Mission Exploring Farming Opportunities for Delaware Veterans and other Beginning Producers

Learn about Programs, Tools, and Resources Available to New and Beginning Delaware Producers.

**Georgetown**
Tuesday, August 30, 2016 2:00 - 4:00 p.m.
Georgetown Fire Hall
100 S Bedford St.
Georgetown, DE
http://tinyurl.com/FVC-GeorgetownDE

**Dover**
Wednesday, August 31, 2016 4:00 - 6:00 p.m.
Dover Downs Hotel & Casino
1131 N Dupont Hwy
Dover, DE
http://tinyurl.com/FVC-DoverDE

**Townsend**
Wednesday, August 31, 2016 Noon - 2:00 p.m.
Tom Foolery Restaurant (Lunch provided)
714 Ash Blvd.
Middletown, DE
http://tinyurl.com/FVC-MiddletownDE

**WORKSHOP AGENDA**

- Introductions and Overview
- Farm Business Fundamentals
- Capital, Credit, and Cash Flow
- Break & Networking
- Beginning and Veteran Producer Resources
- Risk Management and Crop Insurance
- Evaluations and Networking

**FREE to attend - RSVP encouraged. Refreshments will be provided.**

*For more info: Kole Swanser, 919-443-0075 Email: Kole@AgRAEIS.com*
*Facebook or Twitter @DelawareAgRisk*

# Weather Summary

**Carvel Research and Education Center Georgetown, DE**

**Week of August 18 to August 24, 2016**

**Readings Taken from Midnight to Midnight**

**Rainfall:**

0.08 inch: August 18
0.96 inch: August 21

**Air Temperature:**

Highs ranged from 89°F on August 20 and August 21 to 82°F on August 23.

Lows ranged from 71°F on August 18 to 57°F on August 23 and 24.

**Soil Temperature:**

81.0°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***