



# WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 22, Issue 17

July 18, 2014

## Vegetable Crops

**Vegetable Crop Insects** - Joanne Whalen, Extension IPM Specialist; [jwhalen@udel.edu](mailto:jwhalen@udel.edu)

### Lima Beans

Continue to sample for mites since early detection is necessary to achieve effective control. We are starting to see an increase in stinkbug and plant bug populations. 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.

### Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. Although aphid populations still remain low in most fields, we are starting to see localized infestations. At this time of year, early detection is critical since populations can quickly explode. It is also the time of year to watch for beet armyworm, yellow striped armyworm, and cabbage looper larvae feeding on the rinds of watermelons. If beet armyworm is in the mix, it is important to select a material that is effective on this insect (refer to the Commercial Vegetable Recommendations: <http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/>) - the pyrethroids do not provide effective control.

### 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. Be sure to also watch carefully for beet armyworm larvae since they can quickly defoliate plants. In addition, be sure to use a material that provides beet armyworm control - the pyrethroids will not control this insect.

### Snap Beans

As corn borer and corn earworm populations start to increase again, you will need to consider treatments for both insect pests. Sprays are needed at the bud and pin stages on processing beans for corn borer control. As earworm trap catches increase, an earworm spray may also be needed at the pin stage. You will need to 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. Once pin pods are present on fresh market snap beans, a 7 to 10-day schedule should be maintained for corn borer and corn earworm control:

<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/>.

---

**Watermelon Fruit Disorders** -Gordon Johnson, *Extension Vegetable & Fruit Specialist*; [gcjohn@udel.edu](mailto:gcjohn@udel.edu)

Watermelon harvest will be in “full gear” soon across Delmarva. The following is a review of common fruit disorders that can occur in watermelon.

### **Misshapen Fruits**

Poor pollination due to low bee activity, may result in “bottlenecks”, or constricted growth at the stem end of the fruit, especially in seeded/elongated watermelons. Research has shown that a minimum of 1,000 grains of pollen are required to be distributed over the three lobes of the stigma of the female flower to produce a uniformly shaped fruit. In seedless watermelon, poor pollination may lead to undesirable “triangular” fruits.

### **Sunscald**

Sunscald occurs when fruits are exposed to direct sunlight, especially on extremely hot days. Under these conditions, rind surfaces can reach temperatures exceeding 120°F killing cells and resulting in sunburn spots. Fruits with little or no foliar cover are at most risk. Sunscald or sunburn first appears as a gray or white area on the exposed upper surface of the fruit. Fruit with dark rinds are more susceptible to sunscald than those with light colored rinds. Sunscald severity is related directly to fertility regime and foliage cover. Proper fertility and soil management promotes adequate vine growth and coverage of fruit. Sunscald severity is also associated with diseases that reduce foliage cover, such as anthracnose, or gummy stem blight.

### **Hollow Heart**

Hollow heart is an internal split or void in the flesh of the watermelon. While the cause of hollow heart has not been definitively determined, evidence strongly points to inadequate pollination. Hollow heart is generally more severe in seedless fruit and in the crown set. Varieties vary considerably in their susceptibility to hollow heart. Dense fleshed varieties, mini, and personal type watermelons have lower hollow heart incidence. Factors that would influence pollination such as cold weather during fruit set or delayed male flower production on pollenizers will increase hollow heart potential in susceptible varieties.

### **Water Soaking**

This disorder occurs where excess water accumulates at the bottom of the fruit resulting in a water soaked appearance of internal flesh. Water accumulates during cloudy weather when transpiration from vines is low. Water soaking sometimes appears in fruits where foliage has deteriorated since excess water cannot be transpired.

### **Splitting**

Splitting during handling occurs in fruits under excessive water pressure. Excess irrigation or rainfall are the usual causes.

### **Irregular Ripening**

Irregular ripening can be a problem in some years and varieties. Watermelons are classified as non-climacteric since they do not continue to

ripen significantly after harvest. However, recent research has shown that watermelon fruit produce a burst of ethylene at the white fruit stage and factors that reduce ethylene will slow ripening. Watermelon fruit development and ripening are also dependent on the accumulation of sugars. Loss of foliage or stem tissue due to diseases such as gummy stem blight or insect or mite feeding can reduce the amount of sugars available to the fruit. Different varieties, low potassium nutrition, or variability in vine health will lead to variability in fruit ripening.

### **Internal Rind Necrosis**

Internal rind necrosis is indicated by the presence of a corky, red-brown layer of tissue that occurs on the inside of the rind of affected fruit but that does not extend into the fruit flesh. The disease occurs sporadically and is thought to be caused by bacteria (*Erwinia*) that are naturally present on fruit. Drought stress has been implicated in this disorder.

---

### **Fruit Loads and Fruit Quality in Fruiting Vegetables** -Gordon Johnson, *Extension Vegetable & Fruit Specialist*; [gcjohn@udel.edu](mailto:gcjohn@udel.edu)

We are in the harvest season for fruiting vegetables - watermelons, cantaloupes, tomatoes, peppers and others.

A vegetable plant's carrying capacity for fruits will be affected by the amount of healthy, effective leaf area. Effective leaf area is that which has adequate exposure to sunlight and that is not excessively shaded. Plants generally have excess leaf area and can lose some leaf area before affecting yield. However, once a critical point is reached in lost leaf area, yield will decline. When leaf area is compromised by diseases, insect or mite damage, or injury (hail, wind, chemicals, fertilizer burn, leaf scorch), then fruit loads or fruit quality may be affected. Plants may abort fruits to carry only the number that can be supported by the photosynthates produced. Fruits may be smaller in size and quality (such as sugar content) is often reduced.

When plants are carrying full fruit loads, this also places additional stress on the plant. The plant shifts food resources to the fruits and away from other uses such as defensive chemicals

used to combat diseases and insects. It is when plants have full fruit loads that they are often the most susceptible to pests. For example, we often see mite damage in watermelon pollenizers at higher levels than in seedless plants. This is because they are flowering sooner and are producing both male flowers and fruits and have heavier demands placed upon them. It is interesting to see fields of seedless watermelons where pollenizers are missing (were not planted or died). The plants are extra vigorous and healthy. This is because they have reduced fruit loads.

Overly vigorous plants will produce too much foliage and excessive shading can occur in leaves that are covered. This reduces effective leaf area and can set up conditions that favor diseases. It also keeps plants in a "juvenile" stage and delays flowering and fruiting. The goal is to strike a balance by having adequate but not excessive leaf area to support developing fruits. Attention should be paid to populations and to nitrogen levels to avoid excessive foliage.

Fruit loads are also determined by fruit set. Those environmental factors that affect fruit set such as heat and cold will reduced fruit loads. This may be due to reduced pollen production, reduced pollen viability, reduced pollen transfer, or increased abortion of flowers.

---

### **Tomato Ripening Problems** - Jerry Brust, *IPM Vegetable Specialist, University of Maryland*; [jbrust@umd.edu](mailto:jbrust@umd.edu)

I have been getting emails and calls about tomato ripening problems such as blotchy ripening, yellow shoulders, grey wall, internal whitening, etc. (Figures 1, 2 and 3). They all have the same root cause; a lower level of potassium (K+) than what is needed by the fruit to ripen properly. One of the more common problems I have seen is internal whitening, this occurs when the outside of the tomato appears nice and red, but when cut open there are large areas of white blotches of hard corky tissue which are not confined to the outer wall of the fruit but are found throughout the interior walls of the fruit (Figure 2). We usually find that the soil K+ levels are adequate or even at high levels for K+, but the tissue samples are low to very

low in K<sup>+</sup> (2.5-1.5%). We also are starting to see problems in the field with yellow shoulders and uneven ripening (Figures 1 and 3). These maladies come in mid to late July when plants are putting on a heavy fruit load and temperatures and humidity are high. The cause is the same, K<sup>+</sup> levels too low in the plant. This is often caused by roots that are concentrated in the top 6-8 inches of soil under black plastic, which can raise soil temperatures to the point where the uptake of K<sup>+</sup> and other nutrients are reduced enough to cause ripening problems. Some things I have discussed in the past that help reduce these ripening problems include feeding more K<sup>+</sup> through the drip, using foliar sprays to add a little more K<sup>+</sup>, using white plastic mulch instead of black for mid-season tomatoes and using a 30% shade cover over the tomatoes.



Figure 2. Internal whitening of tomato fruit



Figure 1. Various forms of ripening problems for tomatoes in the Mid-Atlantic



Figure 3. Yellow shoulders in tomato

**Potato Disease Advisory #10 - July 18, 2014** - Nathan Kleczewski, Extension Specialist  
- Plant Pathology; [nkleczew@udel.edu](mailto:nkleczew@udel.edu)

Date	DSV	Total DSV	Accumulated P-Days	Recommended Spray Interval
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
7/12-7/18	7	89	541	7-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

There have been more reports of late blight in Pennsylvania. To date nothing has been reported in Delaware. 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](mailto:jwhalen@udel.edu)

During the past week, we saw an increase in trap catches for Spotted Wing Drosophila (SWD) adults but in general numbers are still low (highest catch was 5 per week). Unfortunately, there are no thresholds available based on trap catches. Small fruit growers (especially bramble and blueberry growers) will need to maintain their spray schedules for this very damaging insect pest. Information from surrounding states indicates that they are seeing the same trend. The following link from Pennsylvania provides information on what they are currently seeing as well as monitoring and management information:

<http://extension.psu.edu/plants/tree-fruit/news/2014/swd-is-present-in-pa-...-swd-update-july-10-2014>

## Agronomic Crops

**Agronomic Crop Insects** - Joanne Whalen, Extension IPM Specialist; [jwhalen@udel.edu](mailto:jwhalen@udel.edu)

### Alfalfa

Continue to scout fields on a weekly basis for leafhoppers. In past years, we have also seen an increase in thrips when weather conditions turn hot and dry. Reports from other areas of the country indicate that thrips feeding on the developing leaf tissue can cause the leaves to distort as they emerge. Leaves may also be curled, with a cupped or puckered appearance. Although there are no thresholds for thrips in alfalfa, the following information from other areas of the country may be helpful when considering the need for thrips management: “(a) high populations of bean or onion thrips may cause damage, especially in dryland conditions and (b) if a thrips treatment is contemplated, it is best to cut as soon as possible and treat the regrowth if the infestation persists. Thrips are very difficult to control in alfalfa, so excellent coverage is important and two applications may be required for satisfactory results.”

It is also time to start looking for defoliators in alfalfa. With the higher potential for fall armyworm moving north, be sure to watch for defoliation from fall armyworm, beet armyworm, webworms and corn earworm. No thresholds are available; however, controls should be applied before significant defoliation occurs.

### Soybeans

We continue to see a number of defoliators (grasshoppers, Japanese beetles, Oriental beetles, silver spotted skipper, bean leaf beetles and green cloverworm) present in full season beans. As full season fields enter the bloom to pod fill stages, remember that the threshold drops to 15% defoliation.

We are starting to see an increase in stinkbug populations (native green and brown); however, populations are still relatively low. Very few brown marmorated stink bugs (BMSB) have been found except for an occasional nymph on field edges near woods in New Castle County. Economic damage from stink bugs is most likely

to occur during the pod development and pod fill stages. You will need to sample for both adults and nymphs when making a treatment decision. Available thresholds are based on beans that are in the pod development and fill stages. 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.

Be sure that you continue to sample for mites since economic populations can still be found throughout the state. Early detection and control before populations are exploded is necessary to achieve effective control. In addition, be sure to sample the entire field since economic populations can be found throughout fields and in some cases higher populations and damage are being found in field interiors.

---

**Corn and Soybean Disease Update** - Nathan Kleczewski, Extension Specialist - Plant Pathology; [nkleczew@udel.edu](mailto:nkleczew@udel.edu)

Until this week conditions have not been favorable for significant levels of disease development in corn and soybean. Most full season soybean is between R1 and R2, and low levels of Septoria brown spot and Downy mildew are present at many sites. Double crop beans are just getting out of the ground and are perhaps at V5 in some of the early fields. In corn, Grey leaf spot is now present in many fields, although levels have been very low in the majority of fields I have examined. Potential irrigation burn was observed in one field, and some smut has been found at a couple of sites. Things to keep an eye out for in the next couple of weeks are Sudden Death Syndrome in full season soybeans and Anthracnose top dieback in corn. Many full season beans were planted into cool, wet soils, which favor infection by the SDS pathogen. As the beans mature the fungus will produce a toxin, which results in the characteristic interveinal necrosis often associated with SDS (Figure 1). Blue fungal growth may be seen on the base or the roots of infected plants. SDS may be associated with Soybean cyst nematode, so full season beans planted into fields with a

history of SCN may have a greater potential to show disease symptoms.



Figure 1. A leaf with onset of SDS symptoms. Several other disorders and diseases can cause similar symptoms.

With the amount of anthracnose we have seen this year there may be a greater potential to see anthracnose top dieback in some corn fields. Typically the top dieback phase starts two or three weeks after pollination. Top dieback caused by the anthracnose pathogen is characterized by yellowed, purple, or dead/dying flag leaves on plants scattered throughout the field. When the leaf sheaths are peeled back at the top of the affected plants, shiny black lesions can be observed on the outside of the stalk. Under appropriate conditions a salmon-colored gel can be seen on the stalk. This gel contains spores of the fungus. If the stalk of the top is split, the pith will often appear discolored and rotted in the upper internodes. **Factsheets for SDS and Anthracnose can be viewed on the University of Delaware Field Crops Factsheet site (<http://extension.udel.edu/factsheet/>), hard copies will be available at your county Extension office soon.**

A final note- it is too early to see symptoms of red root rot and stalk rots in corn. These diseases occur much later in the season. Remember, many things can cause red brace roots.

**Fungicides in 2014 Corn** - Nathan Kleczewski,  
*Extension Specialist - Plant Pathology;*  
[nkleczew@udel.edu](mailto:nkleczew@udel.edu)

Over the course of the week many people have asked if or when fungicide use is profitable in the 2014 corn crop. Unfortunately the answer is not straightforward. The answer depends on several factors including 1) potential for disease (hybrid, environment, and disease), 2) grain price, 3) yield potential and 4) the cost of fungicide application.

**Potential for disease.** The first thing you need to do when determining if/when you should apply a fungicide to corn this year is determine how much disease there is in the field. The most common disease in the area this year is Grey leaf

spot. The hot temperatures have not been favorable for Northern Corn Leaf Blight and rusts typically are not a major concern. See my update from earlier in this issue of the WCU regarding field corn diseases. If you have greater than 5% severity on any of the three leaves below the ear in 50% or more plants in the field then the level of disease might require intervention. However, other factors will impact future development of disease including hybrid genetics and the environment. A “worst case environmental scenario” for a residue born disease such as Grey leaf spot is a no-till, irrigated field of continuous corn with a history of the disease. **Table 1** provides some guidelines that may help you determine the risk level of your field and if a fungicide may potentially benefit your crop.

**Table 1.** Level of fungicide need for protecting corn yield from Grey leaf spot. In this table disease is assumed to be present on 50% or more of plants at greater than 5% severity on the 3<sup>rd</sup> leaf below the ear leaf or above. In addition, the worst case scenario is assumed: a field with a history of GLS, no-till, corn after corn, and moderate temperatures. The lack of any of these factors will further reduce the likelihood of a fungicide benefitting the crop.

Hybrid Resistance Rating to GLS	Irrigation practice	Fungicide need
<b>Highly Resistant</b>	Irrigated	Low-Medium
	Unirrigated	Very low
<b>Moderate</b>	Irrigated	Medium
	Unirrigated	Low-Medium
<b>Low resistance</b>	Irrigated	High
	Unirrigated	Medium-High

**Potential for fungicide benefit to cover application cost.** With corn heading towards \$4.00 per bushel, a greater yield benefit is needed to cover costs. **Table 2** provides examples of the bushel returns you would need to cover fungicide treatment (applicator cost + product) at different grain prices.

**Table 2.** The required bushel/acre yield increases required to pay for various fungicide application costs at 5 different grain prices.

Application Cost (per Acre)	Grain Price (bu)				
	\$3.50	\$4.00	\$4.50	\$5.00	\$7.00
<b>\$20</b>	5.7	5	4.4	4	2.9
<b>\$25</b>	7.1	6.3	5.6	5	3.6
<b>\$30</b>	8.6	7.5	6.7	6	4.3

The likelihood that a fungicide will pay for itself is greatest in situations where disease potential is high, application costs are low, and grain prices are high. How often does the fungicide

pay for itself? A 2011 paper published in the journal *Phytopathology* examined 187 studies of corn responses to fungicides conducted throughout the Corn Belt from 2002-2009. The

chance that the application costs of a fungicide would be covered by the yield return were estimated across a range of grain prices (\$2-\$7 per bu) and application costs (\$16-\$40 per acre). In a nutshell, the research showed that in over 85% of the grain/application cost combinations, there was a **greater than 50% chance that the application of a fungicide would not pay for itself if there was less than 5% disease severity on the ear leaf between R4 and R6**. Conversely, only 33% of the grain/application cost applications did not pay when there was more than 5% disease severity on the ear leaf between R4 and R6. The study showed that although fungicide use in corn can certainly be beneficial, responses are also highly variable from location to location and year to year. For example, fungicide applications reduced corn yields in 26-48% of the studies included in the metaanalysis. The take home message is that you will need a greater bu/A yield increase this year to cover the application cost. You are more likely to recover this cost in disease favorable environments (no till, irrigated, corn after corn, history of GLS) when susceptible hybrids are planted. As with most things in agriculture, nothing is guaranteed.

Reference: P. A. Paul, L. V. Madden, C. A. Bradley, A. E. Robertson, G. P. Munkvold, G. Shaner, K. A. Wise, D. K. Malvick, T. W. Allen, A. Grybauskas, P. Vincelli, and P. Esker. 2011. Meta-Analysis of Yield Response of Hybrid Field Corn to Foliar Fungicides in the U.S. Corn Belt. *Phytopathology* 101:1122-1132.

## General

**Remove Weeds Before the Seeds Mature**-  
Mark VanGessel, *Extension Weed Specialist*;  
[mjv@udel.edu](mailto:mjv@udel.edu)

Many weeds have started to flower in the past week or two. Weeds, depending on the species, will continue to flower from now until frost. I am often asked how soon after flowering are the seeds mature. We have some ongoing trials looking at this issue, but we have a few preliminary results to share. First and foremost, seeds are mature shortly after flowering. By this I mean that within two weeks of flowering, the

seeds on some plants are capable of germinating and contributing to the weed seedbank. So if you are pulling weeds (or mowing them or spraying them) to stop them from producing seeds, you should physically remove the weeds from the field because they may already have mature seeds.

---

**Livid Amaranth** - Mark VanGessel, *Extension Weed Specialist*; [mjv@udel.edu](mailto:mjv@udel.edu)

I have only seen two samples of livid amaranth (also called livid pigweed) in the past 15 years, but both of them came in this year. In neither case was the grower overly concerned about the plant, rather it was more of a curiosity. Livid amaranth is a pigweed that generally is shorter than our redroot pigweeds and often paler in color. It is distinguished from most of the other pigweeds because it has a leaf tip that is noticeably “notched” (see photo below). It has been in the region for a long, long time, so it is not a new species, but it is interesting that I was asked about it twice this summer.

More photos and short description can be found at the Univ. of Massachusetts Weed Herbarium website:

<https://extension.umass.edu/landscape/weeds/amaranthus-lividus>



Livid amaranth. Photo from  
<http://www.weedalogue.com/livid/>

---



# Announcements

## **Soybean Diagnostic Day**

Tuesday, August 12, 2014 4:30 – 6:30 p.m.  
University of Delaware  
Research and Education Center  
(old office building)  
16686 County Seat Hwy  
Georgetown, DE

The United Soybean Board and Delaware Soybean Board are teaming up with the University of Delaware to sponsor the Soybean Diagnostic Day. The boards administer the soybean checkoff, which collects one half of one percent of the net market value of soybeans when they are sold at the first point of sale. The checkoff supports soybean research, marketing and education. Diagnostic Day is supported by USB's Technology Transfer program.

Diagnostic Day is designed to help growers feel more comfortable diagnosing soybean production problems. The event will last about two hours and will consist of in-field, hands-on training to detect and identify pests and diseases of soybeans, and will end with a dinner courtesy of the soybean checkoff.

**Pesticide and CCA recertification credits have been requested.**

*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](mailto:adams@udel.edu).*

---

## **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.

This interactive workshop will 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](mailto: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

### **SESSIONS ON:**

Successful Wholesaling  
Designing & Weddings  
Greenhouse Management

Hiring & Managing Crew  
& MUCH MORE

GROWERS SCHOOL, TRADE SHOW, TOURS & NEW  
VARIETIES!

Online brochure at:

[http://www.ascfg.org/images/stories/growinggrowers.p  
df](http://www.ascfg.org/images/stories/growinggrowers.pdf)

Additional conference information at:

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

---

## 2014 Maryland Crop Insurance Workshop

Tuesday, September 9, 2014  
Doubletree Hotel  
210 Holiday Ct  
Annapolis, Maryland

### AGENDA

8:45

**Registration and Coffee**

9:15

Welcome

9:30

**Current MD Crop Conditions and Outlook**

Pat McMillan

*Assistant Secretary, Marketing, Animal Industries, &  
Consumer Services*

10:00

**Farm Safety Net Under the 2014 Farm Bill**

Dr. Joe Glauber

*Chief Economist, U.S. Department of Agriculture*

11:00

**Current Crop Insurance & Federal Policy Situation**

Stephen Frerichs

*Lobbyist, American Society of Farm Managers and  
Rural Appraisers*

12:00

**Lunch**

1:15

**Update on 2014-15 Educational and Promotion  
Program**

Howard Leathers,

*Associate Professor Agricultural and Resource  
Economics, University of Maryland*

Steve Connelly

*Maryland Dept. of Agriculture*

Lucas Clifton,  
*Farmers First Services*

2:15

**TBA**

Juan Garcia

*Administrator, Farm Service Agency, USDA*

2:30

**Assembling the Pieces into a Reliable Risk  
Management Plan**

Gene Gantz

*Risk Management Agency*

3:15

**Adjourn**

*This workshop is sponsored by the University of  
Maryland Department of Agricultural and Resource  
Economics, Maryland Department of Agriculture,  
USDA's Risk Management Agency, University of  
Maryland Extension and the Delaware Department of  
Agriculture. The workshop is free. To register please  
go to <https://cropinsuranceworkshop.eventbrite.com>.*

---

# Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of July 10 to July 16, 2014

Readings Taken from Midnight to Midnight

## Rainfall:

1.20 inch: July 10  
0.01 inch: July 12  
0.11 inch: July 14  
1.02 inch: July 15  
0.04 inch: July 16

## Air Temperature:

Highs ranged from 91°F on July 14 to 82°F on July 10, July 11 and July 16.

Lows ranged from 73°F on July 14 to 62°F on July 12.

## Soil Temperature:

80.3°F average

Additional Delaware weather data is available at  
[http://www.deos.udel.edu/monthly\\_retrieval.html](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***

Cooperative Extension Education in Agriculture and Home Economics, University of Delaware, Delaware State University and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Delaware Cooperative Extension, University of Delaware. It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age or national origin.

Reference to commercial products or trade names does not imply endorsement by University of Delaware Cooperative Extension or bias against those not mentioned.