



# WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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## Vegetables

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

### Cabbage

Continue to sample for cabbage looper, diamondback larvae and harlequin bug. Be sure to scout and select control options based on the complex of insects present in the field.

### Cucumbers

Be sure to watch for an increase in cucumber beetle and aphid populations. A treatment should be applied for aphids if 10 to 20 percent of the plants are infested with aphids with 5 or more aphids per leaf.

### Lima Beans

Continue to scout for stinkbugs, lygus bugs and corn earworm. Economic levels of stinkbugs and earworms can be found. Since trap catches remain high, multiple applications will be needed for earworm control.

### Peppers

With the high corn earworm and corn borer moth catches in blacklight traps throughout the state, be sure to maintain a 5 to 7-day schedule on all peppers for worm control. Also, be sure to select materials that control both earworms and corn borers.

### Snap Beans

With the high corn borer and corn earworm moth catches, you will need to consider a treatment

for both insect pests. Sprays are needed at the bud and pin stages on processing beans for corn borer and corn earworm control at this time. As a reminder, if you are using Orthene (acephate) for corn borer control in processing snap beans, it will not provide effective corn earworm control. Call the Crop Pest Hotline or check our website for the most recent trap catches in your area to help decide on the spray interval between the pin stage and harvest for processing snap beans

(<http://ag.udel.edu/extension/IPM/traps/latestblt.html>

and

<http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html>).

### Spinach

Both webworms and beet armyworms are active at this time and controls need to be applied when worms are small and before they have moved deep into the hearts of the plants. Also, remember that both insects can produce webbing on the plants. Generally, at least 2 applications are needed to achieve control of webworms and beet armyworm.

### Sweet Corn

With the high corn earworm catches throughout the state, all fresh market silking sweet corn should be sprayed on a 2-day schedule.

**Food Safety for Leafy Greens** -Gordon Johnson, Extension Ag Agent, Kent Co.; [gcjohn@udel.edu](mailto:gcjohn@udel.edu)

*With fall vegetable season approaching, cabbage, collards, kale, mustard, turnips, lettuce, Chinese cabbage, and other leafy greens will be harvested. The following are some considerations in the production, harvest and handling of leafy greens from the Southern Regional Fresh Produce Food Safety Training Program.*

Many leafy greens (including cabbage, collards, kale, mustard, turnips, lettuce, and Asian greens) are cut by hand and packed directly in the field for the fresh market. Cabbage also may be cut by hand, loaded into a bulk container, such as a field wagon, and hauled to a packing shed for trimming, grading and packaging. Field sanitation practices are very important to reduce the spread of disease among plants and to prevent the possibility of contamination by microorganisms that are pathogenic (cause illness) to humans.

The principal food safety hazard from leafy greens is microbial contamination. Ensuring the safety of raw leafy greens begins with preventing hazards in the field.

Grazing animals on or near crop land can introduce bacteria harmful to humans into the soil. Growers should ensure that land has not been used for animal husbandry and that it is not close to animal feedlots or water runoff from grazing lands.

Incompletely composted organic fertilizers (manures in particular) may contain bacteria harmful to humans from animal or human feces. If organic fertilizers are used, they must be properly and completely composted so pathogens are not present. *To avoid potential for contamination, raw manures should not be used for the production of leafy greens within that growing season, even if incorporated before planting.*

Natural surface water (e.g., ditch, stream, pond) provides enough organic matter to support the growth of bacterial pathogens. It may be used with caution for irrigation but should be tested

for the presence of the bacterium *Escherichia coli* (*E. coli*), which is an indicator of fecal contamination. *Well water is less likely to harbor human pathogens but still should be analyzed for contamination.*

Overhead irrigation is more likely to spread contamination to above-ground plant parts than is root-zone irrigation. Growers should document how water is stored, if animals are confined nearby, and if water is potable (safe to drink).

Hand-harvesting also may lead to pathogen contamination if field workers practice poor hygiene. Field crews must be trained and monitored regarding personal hygiene practices, and portable bathrooms and hand washing facilities must be provided at convenient locations in the field. *The same personal hygiene precautions apply to family operations. Frequent hand washing is a key and provisions need to be made to be able to wash hands in the field.*

Hand-harvesting using knives can wound produce, encouraging contamination from the soil. Knives should be routinely sanitized to keep disease inoculum from building on their surfaces and infecting sound cabbage heads or leafy greens. For best protection, place buckets of sanitizing agents at the ends of selected rows in the field. This will allow workers to sanitize their knives at regular intervals and reduce disease buildup over the course of the production day. Fresh sanitizer should be introduced throughout the work day. *Routine knife sanitation is also critical for smaller farms using family labor.*

Containers for harvesting fresh produce should be washed with detergent prior to use. After detergent cleaning, field bins, buckets, baskets, wheel barrows, etc., should be sanitized by using a very strong sodium hypochlorite solution dispensed from a high pressure sprayer. This should be repeated each harvest day. *If wagons or trucks are used, the same procedure should be followed.*

Leafy greens may be cleaned in sanitized water (75 to 100 ppm free chlorine) before marketing. Direct field-packing of boxed leaves or heads also may be done, without washing. *It is critical*

to make sure that no dirt has contaminated the greens if doing field packing and to pack into clean boxes or containers.

Ice used to cool and preserve quality during transit can be a source of contamination. Steps should be taken to minimize ice exposure to workers, soil, and airborne dust.

If water is used in cleaning and cooling it should be chlorinated at a concentration of 75 to 100 ppm of free chlorine. Chlorination can be accomplished using a gas injection system, adding bleach, or using calcium hypochlorite tablets. Chlorination levels in the water should be monitored frequently during operation, through the use of a chlorine test kit. Water pH should be maintained between 6.5 and 7.5 to avoid having to use excess chlorine and in order to maintain recommended free chlorine levels. Excessive use of chlorine causes gassing off (which can lead to objectionable chlorine odor, irritation of workers' skin, corrosion of equipment, and increased sanitation cost).

*Information reprinted in part from "Good Agricultural Practices for the Production and Handling of Cabbage and Leafy Greens" by William C. Hurst and Darbie Granberry, Food Science and Horticultural Science Departments, University of Georgia, Athens, Georgia. This is a factsheet from the Southern Regional Fresh Produce Food Safety Training Program. Information in italics is from Gordon Johnson, Extension Agriculture Agent, UD, Kent County.*

## Agronomic Crops

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

### CORN EARWORM ALERT

#### Soybeans

*High levels of corn earworm have been reported in fields throughout the state. As indicated in past newsletters, the combination of drought stressed corn, early dry down of corn and high moth catches has resulted in a high potential for damage this*

*year. Be sure to check all labels for the days from last application to harvest as well as other restrictions.*

As of this date, good control has been reported in fields sprayed with the highest labeled rate of a pyrethroid if treatments were applied when worms were small. There are only a few fields so far that may need to be re-treated 7-10 days after application but this is due to a recent hatch – all worms found have been very small in size. As indicated last week, with the extended moth flights and no sign of weather that will help crash populations (i.e. it has just been too dry since you need a combination of rainy weather, cool evenings and mornings with dew and high relative humidity during the day for about a week to get fungal pathogens developing), you may have to treat fields twice under these conditions. A few fields are also reporting larger worms after application but in these cases the highest labeled rate of a pyrethroid was not used. Another word of caution, it will be extremely important to wait and check fields at least 4 days after an application of a pyrethroid. Fields that have been checked at 3 days are still showing worms – however, when those same fields have been visited just 24 hours later we are seeing very good control. As a reminder, although the pyrethroids do have contact activity, the main mode of action is as an ingestion product. So be sure that you do not look at fields too early to make a re-treatment decision. When treating for earworms with pyrethroids, it is important that you make applications to fields that are at threshold levels, apply treatments when the worms are small and use the highest labeled rate. If fields that have been treated with a pyrethroid need to be treated again, you may want to consider using a non-pyrethroid for the second application. In addition, if you are treating for the first time and worms are larger at treatment time, you should consider a non-pyrethroid option. Other labeled options for earworm control include Steward and Larvin. Research trials in VA indicate that Lorsban has only done a fair job and as a reminder it has no residual control.

So – once again, the only way to know if you have an economic level will be to scout and

treat when worms are small – do not wait until you see pod damage. With higher soybean prices, the best approach to determining a threshold is to access the Corn Earworm Calculator (<http://www.ipm.vt.edu/cew/>) which estimates a threshold based on the actual treatment cost and bushel value you enter.

We have also seen an increase in soybean aphid populations in fields in New Castle County. As a general guideline, treatment is needed through the R-5 stage (seed is  $\frac{1}{8}$  inch long in the pod of one of the four uppermost nodes on the main stem) of soybean development if economic levels are present. It may also be beneficial to spray through R-6 stage (pods containing a green seed that fills the pod cavity at one of the four uppermost nodes on the main stem) -- reports vary as to the benefit of spraying once plants reach the R-6 stage but in some years and some situations there has been an economic return. Spraying after the R-6 stage has not been documented to increase yield in the Midwest. The suggested treatment threshold from the Midwest is still 250 aphids per plant.

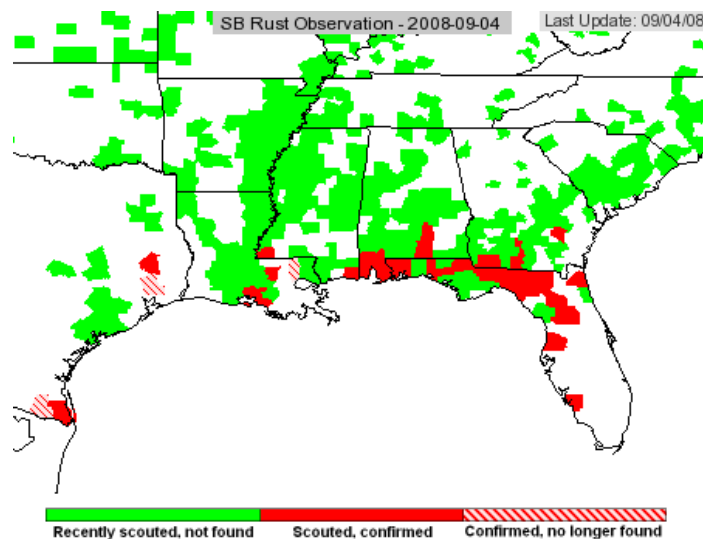
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### **Soybean Rust Update** - Bob Mulrooney, Extension Plant Pathologist; [bobmul@udel.edu](mailto:bobmul@udel.edu)

Since January of 2008, soybean rust has been reported in four counties in Alabama; six counties in Georgia, 18 counties in Florida; four counties in Louisiana; three counties in Mississippi, and five counties in Texas. Rust was also reported in three states (five municipalities) in Mexico on yam bean and soybean. These were destroyed or are no longer active. Recent and upcoming hurricane disturbances are likely to move spores northward.

In DE soybean maturity ranges all over the board with the Group III varieties almost mature in many areas. Most of the non-irrigated double crop beans are very small and have not formed a canopy which would be unfavorable for soybean rust. Once soybeans reach R6 (full seed development) they are not affected by soybean rust. Most of the crop will be in the later growth stages in 3-4 weeks and again would be unaffected by SBR. The soybean rust fungus is beginning to show up now in a few commercial

fields in FL, and GA which was predicted several weeks after Hurricane Fay hit the area. Weather in the Gulf Region will continue to be favorable for infection and sporulation due to the aftermath of Hurricane Gustav and now Hanna on its heels. There still is not much soybean acreage infected but kudzu infections are increasing as well. It is hard to predict if there are enough spores in the South to have much impact if a significant transport event occurs like Hurricane Hanna might provide. The other ingredient to add to the mix is that many of the GA producers and now SC growers have sprayed their soybeans with fungicides for other diseases and may spray specifically for rust if they think they are at risk. This protects their crops and does not provide added spores for transport north. There is a very low risk of rust appearing on late maturing full season irrigated soybeans and possibly some irrigated double crop soybeans after wheat or barley, but as stated earlier it would in all likelihood occur too late to affect yield. Spraying is not recommended.



**Grain Marketing Highlights** - Carl German,  
*Extension Crops Marketing Specialist;*  
[clgerman@udel.edu](mailto:clgerman@udel.edu)

### Private Forecaster Pegs U.S. Corn Crop at 12.159 Billion Bushels

FC Stone has estimated the '08/'09 U.S. corn crop at 12.159 billion bushels. Their soybean crop estimate was placed at 3.003 billion bushels. In August, USDA estimated the U.S. corn crop at 12.288 billion bushels and the soybean crop at 2.973 billion bushels. In 2007, U.S. corn production was 13.074 billion bushels and soybean production was 2.585 billion bushels. This private estimate indicates that ending stocks for U.S. corn would decline and U.S. soybean ending stocks would increase from USDA's August estimate. The next scheduled USDA supply and demand report will be issued on September 12<sup>th</sup>.

As the line-up of pre-report production estimates make their way onto the trading scene, there are a few market factors that are worth mentioning. First, the dynamics of the commodity markets are changing. The price of crude has declined by nearly \$36.00 per barrel (now trading at \$108.85) and the U.S. dollar index has increased by nearly seven points since July 15<sup>th</sup> (now trading 78.56). The dollar index last traded at this level in December '07. At that time Dec '08 corn futures were trading in the \$4.40 to \$4.75 range. Evidence of demand destruction, loss of demand due to high commodity prices, now has commodity prices seeking a new equilibrium at lower levels in order to begin the process of rebuilding demand.

### Marketing Strategy

The vagaries of the weather and its impact upon projected U.S. production for the '08 corn and soybean harvest have not been totally accounted for at this point in time. The oil industry was spared significant damage along the Gulf Coast from hurricane Gustav. Resulting rains for the soybean crop have been beneficial in the Corn Belt albeit somewhat late. General consensus is that no big changes/surprises are expected to be released in USDA's September estimates.

The possibility of an early frost and possible crop damage from looming hurricanes will be watched

this next week by commodity traders. Those possibilities are enough reason to hold up on grain sales at this point in time. Currently, Dec '08 corn futures are trading at \$5.64; Nov '08 soybean futures at \$12.43; and Dec '08 SRW wheat at \$7.76 per bushel.

For technical assistance on grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.

## Announcements

**For Current Agricultural Information from the UD Kent Co. Extension Office Visit**  
[www.kentagextension.blogspot.com](http://www.kentagextension.blogspot.com)

### Recent Topics:

- Soybean Podworm Alert for Kent Count
- Soybean Rust on the Horizon?
- Soybeans in 2008 –What Can We Expect?
- Corn Harvest Begins
- Late Summer Vegetable Notes
- Annual Plasticulture Strawberry Planting
- Will We Get Any Rain to Break the Drought?
- August Rainfall Totals for Mid-State
- Fundamental Changes in the Fertilizer Market
- How Quickly Will Corn Dry Down After Black Layer?
- Corn Black Layer
- Insecticides for Podworm Control in Soybeans
- Wine Grape Field Day and Twilight in Queen Annes County, MD
- Reminder – Buy in Deadline for 2008 Disaster Program is September 16
- Reminder – Important Deadlines Approaching for New Disaster Program

## Pumpkin Growers Twilight Meeting & Sweet Corn Twilight Meeting

Thursday, September 25 4:30 p.m. - dark  
Wye Research and Education Center  
211 Farm Lane, Queenstown, MD 21658

Meeting participants will be able to see and taste 7 BT sweet corn varieties from a late planted trial. Dr. Galen Dively, long time IPM specialist, will be here for discussion. Also, see 30 varieties of pumpkins grown in a no-till hairy vetch system. Hear university specialists Kate Everts, Jerry Brust, Bryan Butler and Mike Newell describe current pumpkin trials and grower concerns about pumpkin culture and management.

No registration required, light refreshments will be provided.

For more information contact Michael Newell at (410) 827-7388 or [mnewell@umd.edu](mailto:mnewell@umd.edu).

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### Farm Planning 101

Thursday, September 11, 2008 6:00 p.m.  
DSU Smyrna Outreach and Research Center  
884 Smyrna-Leipsic Rd, Smyrna, DE

Create a business plan for your farming enterprise.  
Includes record-keeping and tax information

Light refreshments served.

Please call (302) 857-6462 to register.

*This workshop is part of the 2008 Small/ Beginning Farm Workshop Series held by Delaware State University. For complete information on the workshops planned, see the brochure at <http://www.rec.udel.edu/update08/announcements/smallfarmbrochure2008.pdf>*

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## Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of August 28 to September 3, 2008

Readings Taken from Midnight to Midnight

### Rainfall:

no rainfall recorded

### Air Temperature:

Highs ranged from 92°F on September 3 to 75°F on August 28.

Lows ranged from 71°F on August 29 and August 30 to 53°F on September 1.

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, Extension Associate - Vegetable Crops*

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