



# WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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## *Vegetables*

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

### **Cucurbits.**

Aphid populations continue to increase and in some cases leaf curling can be found. Treatments should be applied when 20% of the plants are infested but before leaves are curled. Actara, Fulfill, Lannate and Thiodan will provide aphid control in cucurbits. If bees are foraging, Fulfill or Thiodan should be used.

### **Lima Beans.**

Be sure to watch for economic levels of leafhoppers. Most labeled insecticides will provide 7-10 days of leafhopper control. In fields with pin pods, you should sample for earworm, lygus and stinkbugs. A treatment should be applied if you find one corn earworm per 6 foot of row or 15 tarnished plant bugs and/or stinkbugs per 50 sweeps. Lannate or Capture can be used to control all 3 insects on lima beans.

### **Peppers.**

At the present time, all peppers that have fruit ½ inch in size or larger should be sprayed on a 7-10 day schedule for corn borer and pepper maggot control. We are also starting to see an increase in aphid populations in peppers. Remember a continuous pyrethroid program **should not** be used to avoid aphid explosions.

### **Potatoes.**

Continue to sample fields for potato leafhoppers and aphids. At this time, the aphid threshold is 10 per leaf. Potato leafhoppers still remain active in later planted fields. The potato leafhopper threshold is 5-10 leafhoppers per 10 sweeps and/or 1 nymph per every 10 leaves.

### **Snap Beans.**

Corn borer trap catches have started to increase, so all snap beans in the bud and pins stages should be treated for corn borers. We continue to find defoliators feeding on the pin pods. In areas where corn borer catches remain low, a treatment should be applied if defoliators are feeding on pin pods. Lannate, Asana or Capture will provide the best control of defoliators.

### **Sweet Corn.**

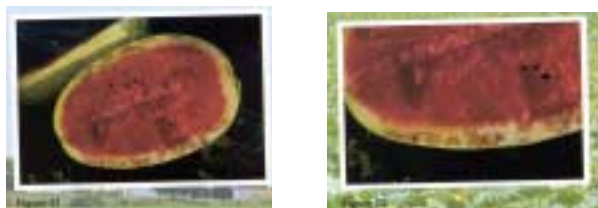
Fresh market silking sweet corn should be sprayed on a 3-4 day schedule in Kent County and in the Laurel area. A 4-5-day schedule is adequate for the rest of Sussex County. In areas where corn earworm pressure is low, sap beetle populations continue to be high. In addition to insect frass, beetles are attracted to plants during the pollination period. Therefore, a 4-5-day spray will be needed if sap beetles are present and corn earworm trap catches remain at less than one moth per night.



**Internal Rind Necrosis on Watermelon** – Derby Walker, Sussex County Extension Agent, [derby@udel.edu](mailto:derby@udel.edu)

Internal rind necrosis has been found in a couple of fields in Sussex County. Both seeded and seedless varieties of watermelon were affected. The fields were watered with trickle irrigation. We hope the following color pattern information will be a good indicator of fruit to cull out. On the melons that were observed with internal rind necrosis, the seedless varieties with a white cast were more likely to have the problem. Seeded varieties that appeared to be sunburned (yellow cast on the exterior – not necessarily a “true sunburn”) seemed to be affected. A very subtle knobiness on the exterior may be observed.

Internal rind necrosis is a noninfectious disorder that appears to affect only watermelon. It has been associated with drought stress. The disorder appears to affect the crown fruit at a greater percentage than later harvests.



**Internal Rind Necrosis on Watermelon**

Photos taken from Diseases and Pests of Muskmelons and Watermelons, Richard Latin, Purdue University Cooperative Extension Service 8/93



**Vegetable Diseases** - - Bob Mulrooney, Extension Plant Pathologist; [bobmul@udel.edu](mailto:bobmul@udel.edu)

**Sweet Corn.**

Be on the lookout for **sweet corn rust**. Look for the small red pustules. Once observed on corn in the whorl stage or earlier, apply a fungicide such as Bravo (fresh market only), mancozeb, or Tilt for control. Older corn will not benefit from an application.

**Lima Bean Downy Mildew.**

At the present time the best program we have for fungicide control of lima bean downy mildew is the application of fixed copper, Champ DP or Kocide 2000, at 2.0 lb per acre on a 7 day interval when conditions are favorable for infection. From previous years plot work this has been the best of the labeled fungicides. Ridomil Gold/Copper has provided good control as well and work is currently underway in the IR-4 program to establish a tolerance so it can be labeled in the future. It is my opinion that using the old Hyre forecasting system can help determine the time to begin fungicide applications, then applications need to be made on a preventative basis. It can take up to seven days for symptoms to appear in a field (from the time that spores land on the plants until mildew is seen). If downy mildew is found in an area, spraying to protect nearby healthy fields would be highly recommended. Spray coverage is important so using as much water as possible would also be encouraged. Races D and E of *Phytophthora phaseol*, the fungus that causes downy mildew, are present and are both a threat to lima bean production in the region.

**Potatoes.**

**Early blight** is beginning to appear in potatoes at low levels on susceptible varieties. Apply Quadris at the 6.2 fl oz rate/A on a 14-day schedule. Apply mancozeb or Bravo between Quadris applications. Look on the oldest leaves first for symptoms of early blight. Early blight produces small circular, brown spots that look like target boards with concentric rings of dead tissue.

**Late Blight Update**

**Disease Severity Value (DSV) Accumulations as of July 18, 2001, are as follows:**

*Location: Joe Jackewicz Farm, Magnolia, DE*  
*Remember that 18 DSV's is the threshold to begin a spray program*

Date	Total DSV	Spray Recommendation
5/16	0	
5/17	11	
5/20	29	

5/30	51	5-day, low rate
6/3	57	5-day, low rate
6/5	57	5-day, low rate
6/7	57	7-day, low rate
6/11	59	10-day, mid rate
6/13	60	10-day, mid rate
6/17	76	7-day mid rate
6/20	76	7-day high rate
6/24	88	7-day high rate
6/27	88	7-day high rate
7/1	89	10-day, high rate
7/4	90	10-day, high rate
7/8	92	10-day, high rate
7/11	94	10-day, high rate
7/15	94	10-day, high rate
7/18	99	7-day, high rate

Thursday's weather allowed for 5 severity values. There have been no reports of late blight on potatoes from our region, but there have been several occurrences from Wisconsin and one in Michigan.

Early blight is now evident on the oldest leaves in many plantings. As vines run out of nitrogen and senesce, look for more early blight to occur.

For late maturing varieties or early blight susceptible varieties, control is necessary.



**Vegetable Diseases** - *Kate Everts, Extension Vegetable Pathologist, University of Delaware and University of Maryland; [everts@udel.edu](mailto:everts@udel.edu)*

### **Pumpkins.**

Developing a spray program for foliar diseases of pumpkins is difficult because many diseases (some controlled by different fungicides) must be considered. The following is a schedule that is designed to be effective and take economics into consideration. The core of the program is broad spectrum products, maneb, chlorothalonil, and Quadris. This program will control most diseases of pumpkin, but it is still necessary to scout for development of powdery mildew and downy mildew.

Early in the season, when disease pressure is low and the plant canopy is relatively open, apply Maneb 75DF 2.0 lb/A. When disease pressure begins to build up, or powdery mildew is observed (threshold of one lesion on 45 old leaves), switch to an alternation of fungicides. Alternate chlorothalonil (such as Bravo Ultrex 2.7 lb/A or Terranil 3 pt 6L/A) plus Nova 40WP 2.5 oz/A with Quadris 12 oz./A. For protection against Phytophthora blight, add copper (such as Kocide DF 1.5 lb/A) to each fungicide application. If Phytophthora occurs, both Delaware and Maryland have been given a Section 18 approval for the use of Acrobat on pumpkin. Acrobat 50 WP may be applied up to 5 times per season.

These fungicides should be applied at regular intervals depending on the susceptibility of the pumpkin variety. Our data indicate that maximum yield on susceptible varieties can be achieved only with weekly sprays. However for varieties with some tolerance to powdery mildew (such as Magic Lantern or Merlin) grown on a cover crop (which reduces black rot pressure) a 14-day schedule does a good job of controlling diseases.

Downy mildew is not usually present here on the Delmarva Peninsula until very late in the season (mid August or September). In some years it is not present at all because it requires high rainfall. Symptoms of downy mildew on pumpkin begin as angular yellow or chlorotic areas on the upper surface of leaves. Sporulation occurs on the underside of leaves and appears brown to gray. The sporangia can be seen with a 10X hand lens and appear as barely distinguishable black or purple specks. Scout your field for the presence of downy mildew and apply Ridomil Gold or Ridomil Gold/Copper if it occurs.

## Anthracnose on Watermelon.

Anthracnose on watermelons is present in several local fields. Disease development often occurs in low areas in the field (the disease is spread by splashing water). To manage anthracnose, apply chlorothalonil (Bravo, Equus, or Terranil) at 2-3 pt 6F/A. Benlate or Topsin M (0.5 lb/A) can be added to chlorothalonil to improve control. Quadris will also manage anthracnose however, because gummy stem blight is also present in many fields chlorothalonil is a better choice. Resistance to Quadris has been found in the fungus that causes gummy stem blight.



### Anthracnose on Watermelons

Photos taken from Diseases and Pests of Muskmelons and Watermelons, Richard Latin, Purdue University Cooperative Extension Service 8/93

## MELCAST for Watermelons

EFI Values (Environmental Favorability Index)

Do not use MELCAST if there is a disease outbreak in your field, it is a **preventative program**. Any questions, please call David Armentrout at (410) 742-8788 or e-mail: da88@umail.umd.edu

Location	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18
Bridgeville, DE	2	0	1	1	0	1	0	2
Laurel, DE (Collins Farms)	3	1	1	1	1	2	2	1
Galestown, MD	4	1	1	0	0	1	2	2
Georgetown, DE	2	1	2	1	2	2	3	1
Hebron, MD	4	1	1	1	1	2	3	1
Salisbury, MD	3	1	2	1	1	3	2	2
Laurel, DE (Vincent Farms)	2	0	0	0	0	1	0	1

Watermelon Fields should be sprayed with a fungicide when 30 EFI values have been accumulated by the weather station nearest your fields. Add 2 points for every overhead irrigation. After a fungicide spray, reset your counter to 0 and start over. If a spray has NOT been applied in 14 days, apply a fungicide and reset the counter to zero. The first and last day above can be partial days so use the larger EFI value of this report and other reports for any specific day

More detailed information concerning MELCAST and sample data sheets are available on the web at <http://www.agnr.umd.edu/users/veg/disease/veg/disease.htm>. . ❖



## **Field Crops**

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

### **Field Corn.**

We can still find Japanese beetles and corn rootworm adult beetles feeding on silking corn. The decision to treat should be based on the number of beetles per ear as well as how far you are in the pollination period. As a general rule, a treatment is recommended on silking corn if you can find 4-5 Japanese and/or corn rootworm beetles per plant and they are clipping silks to less than ½ inch long before 50% pollination.

### **Soybeans.**

Continue to watch for spider mites, leafhoppers and defoliators in soybeans. A treatment for leafhoppers is recommended when you find at least 4 per sweep in drought stressed beans or 8 leafhoppers per sweep in actively growing soybeans. If defoliators are present, the treatment threshold is 30% defoliation prebloom and 15% once bloom occurs. If a combination of insects is present, the threshold for each pest should be reduced by 1/3.

### **Timothy.**

We have once again confirmed cereal rust mite damage on timothy. We know of at least three fields with economic levels. Field appeared yellow and stunted with the plants and leaves tightly rolled described by some as “pineapple-like”. Since we continue to see an increase in fields with problems, we submitted a request for a 24C Special Local needs label for Sevin XLR Plus. The Delaware Department of Agriculture has approved this request and the registration is valid for a period of 5 years (Federal) and one year (Delaware) unless disapproved by EPA within 90 days of issuance. This 24C label is also in effect in Maryland and Pennsylvania. In general, this mite causes most of its damage when the weather is cooler. In the summer, the mites appear to become inactive. This rust mite has caused significant problems in Western Maryland

and Pennsylvania for the past few years. Since this mite is generally a cool season pest, controls should not be needed until next spring. Treatments should be applied when 20% of the leaf tips show curling and mites are present. The use rate for Sevin XLR Plus is 3 pts/acre.



**Field Crop Diseases** - - Bob Mulrooney, Extension Plant Pathologist; [bobmul@udel.edu](mailto:bobmul@udel.edu)

### **Corn Diseases.**

Several corn leaf diseases were diagnosed this week. **Gray leaf spot** is just beginning to appear. Look for the characteristic rectangular gray spots on the leaves. Lesion turn from brown to gray as they expand. **Yellow leaf blight** caused by *Phyllosticta maydis* was also identified from Sussex county and nearby Maryland. Spots (lesions) are rectangular to oval, yellow, cream-colored or tan. Small black specks can be seen in the dead tissue. This is thought to be a minor disease but little is known about it in our region.



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

### **Weather and Strong Demand Continues to Fuel Commodity Markets**

Overnight rain in parts of the Midwest are said to be grain saving, not grain making. Therefore, the possibility of hot and dry weather propelling the corn and soybean markets higher remains intact as of this writing. There are still about two weeks left before reaching the 85% level for pollinating the nation's corn crop. We also have at least another month to go before we can build confidence into the national yield estimates for corn and soybeans. The August crop report will tend to be more important than normal due to unevenness in development of the U.S. corn and soybean crops. Any further reductions in yield expectations will

definitely result in increases in the estimates for the 2001/02 marketing year's average price expectations for corn and soybeans. One of the most significant factors to note this week is the 4% reduction in the nation's crop condition ratings for both corn and soybeans on July 15th vs. July 8th. These factors coupled with strong demand for corn and soybeans and the fact that it remains hot and dry in much of the Corn Belt ("a weather market"), means that we will continue to see commodity prices bidding with a roller coaster effect. A sideline note, it has been about four years since we've seen commodity prices bidding with the kind of volatility that we have in the market at the present time. Keep your eye on the national weather may. Any significant front moving through will put an abrupt end to the weather market.

### **Marketing Strategy**

December corn futures are expected to average \$2.25 to \$2.40 per bushel for the 2001/02 marketing year due to recent reduced yield expectations. The difference in the two average prices will depend upon whether the nations' corn crop comes in at 134 to 137 bushels per acre. Therefore, we are now trading in the top one third of the estimated marketing year price range and it now becomes imperative to advance dry land corn production crop sales to the 50% priced level. For soybeans, \$5.50 or better remains the price objective at which to begin advancing new crop sales. Wheat prices are expected to benefit further by following corn and soybean prices. It is getting near time to consider contracting some new crop wheat (next year's crop) for July '02 delivery.



**Glyphosate Not Killing Horseweed?** - Mark VanGessel, *Extension Weed Specialist*, [mjv@udel.edu](mailto:mjv@udel.edu)

Options for controlling horseweed that is not controlled by Roundup or Touchdown in soybeans are either FirstRate or Classic. Neither of these herbicides are very effective on large horseweed plants, but may provide stunting or suppression of

the horseweed. Our results this year has been inconsistent in regards to the level of control we get with either FirstRate or Classic. FirstRate will be safer on soybeans than Classic. If there are other weeds in the field, particularly grasses, FirstRate or Classic may need to be tankmixed with another herbicide to broaden the spectrum of control.

If you know of a field(s) where Roundup or Touchdown did not control horseweed, we would like to know about it. We would like to get a better understanding of how many fields are infested with glyphosate-resistant horseweed. If you know of a situation, please call Mark VanGessel at 302/856-7303, ext 346.



**Soybean Leaf Cupping** - Mark VanGessel, *Extension Weed Specialist*, [mjv@udel.edu](mailto:mjv@udel.edu)

The following is an article written by Dwight Lingenfelter and Bill Curran at Penn State, with information taken from Iowa State University and the University of Illinois (do you see a pattern).

A few questions have been asked about soybean cupping, particularly with glyphosate-resistant soybeans. Potential causes include herbicide, environment, or soybean genetics.

Growth regulator herbicides: Dicamba (Clarity, Banvel, Distinct) and 2,4-D (and prepackaged mixes containing these herbicides) are commonly used in our area and can cause problems by either drift (particle or vapor) or spray tank contamination. Even very small amounts of growth regulator herbicides can affect soybeans. The first step in dealing with this situation is to rule out the possibility of the soybean coming in contact with a growth regulator herbicide.

Postemergence herbicide applications: The response may be due to the inert ingredients in the herbicide formulation, the herbicide itself, or the spray additives (e.g., nonionic surfactant, crop oil

concentrate, ammonium sulfate, UAN) used with the herbicide. The number of problems associated with leaf cupping has increased with the increase in postemergence applications in soybean. Roundup Ready soybeans seem to be as likely to develop the response as traditional varieties.

**Environmental response:** One theory suggests that soybean plants may also develop cupped leaves in the absence of herbicide applications. This most commonly occurs during conditions of rapid growth. The theory suggests that under these conditions, the balance of naturally occurring hormones in the plant is disrupted, resulting in symptoms characteristic of growth regulator herbicide damage. When this situation develops, the entire field frequently develops symptoms and there will not be any indication of a "drift" pattern. Another thing to look for is the presence of growth regulator symptoms on susceptible weeds in the field. Velvetleaf or pigweeds are fairly responsive to low levels of dicamba. If soybeans are exhibiting cupped leaves, but velvetleaf in the field appears normal, there is a good likelihood that the cupping is an environmental response rather than one caused by a growth regulator herbicide.

**New genetics:** A possible explanation is that current genetics found in soybean are more prone to a growth regulator type response. Some researchers speculate that possibly today's higher yielding varieties are more temperamental than older varieties, and thus results in their hormones getting out of balance occasionally and creating a growth regulator herbicide-type response. However, there are no data to support this theory.

So how does this effect soybean yield? In short, no data exist that definitively explain every case of cupped or puckered soybeans. It is unlikely that one "blanket" explanation exists; each case may be somewhat unique. When dicamba or some other growth regulator herbicide is not involved, soybean plants typically resume normal growth shortly after the cupped leaves are observed. Frequently two or three leaves will develop symptoms and then normal growth

resumes. It is believed that soybean yield should not be impacted under these situations.

The potential for a yield response is greater when a growth regulator herbicide is involved; however, it is impossible to determine the extent of yield loss by examining symptoms that develop after the exposure. Data exist that describe the response of soybeans to exposure to growth regulator herbicides, but other factors may also be at work. The available literature tends to suggest that this type of injury does not always necessarily result in soybean yield loss, but several factors are involved in determining if yield loss will occur. In particular, soybean variety, time of exposure, and dosage are important factors that determine whether yield loss will or will not occur. Much of the available literature suggests that if minor exposure occurs during early vegetative development, yield loss is less likely to occur than if exposure occurs when soybeans have entered the reproductive stage of development. The only reliable method of determining a yield response is comparing the yield of the injured soybean to an area of the same field that is unaffected by the herbicide. In many situations, a valid comparison is not available to help determine the cost of the herbicide damage.



**Rope-wicking Large Weeds** - Mark VanGessel,  
*Extension Weed Specialist, [mjv@udel.edu](mailto:mjv@udel.edu)*

In a number of situations the weeds are very large and growers are searching for ways of controlling them, and spraying an herbicide over the top of the crop is not an option. One consideration is using a rope-wick. There needs to be a height difference of at least 6 inches between the crop and weeds that allows the weeds to come in contact with the wick, but the wick is safely above the crop. Glyphosate (Roundup or Touchdown) is the best option to use with rope wicks. Since glyphosate will kill the crop, a good quality rope wick that does not leak or drip is essential. The rate of glyphosate is one-third glyphosate (as it

comes out of the jug) and two-thirds water. Drive at a slow speed (3 to 5 mph), and the slower the speed the better the coverage because the weeds are in contact with the rope wick for a longer period of time. If the weeds are real dense, consider wicking the weeds twice, driving in opposite directions.



**UPCOMING MEETINGS:**

**University of Delaware Farm & Home Field Day**

August 8, 2001  
U of D Research & Education Center,  
Georgetown, DE

**Crop Diagnostic Field Day**

August 15, 2001  
8:00 a.m. – 11:30 a.m.  
University of Delaware Research & Education  
Center  
Georgetown, DE

**Improving Diagnostic Skills - Correcting Corn Production Problems Through Proper Diagnosis**



Weeds ♦ Insects ♦ Nematodes ♦ Fertility ♦ Variety  
♦ Yield Potential

University of Delaware Extension Personnel will provide hands-on training to improve your troubleshooting skills in corn. Participants will be involved with problem solving scenarios in a field setting and will be expected to help recommend corrective and preventative solutions.

Three Certified Crop Advisor Continuing Education Units (CEU) will be earned. 1.0 credit in Nutrient Management; 1.0 credit in Crop Management; 1.0 credit in Integrated Pest Management. Pesticide recertification credits will be earned.

Participation is limited to first 60 applicants. Prior registration is required. Registration fee is \$15.00/person. Registration deadline is August 3, 2001. Checks confirm reservations.

Registration at 8:00 a.m. with coffee and donuts in the grove. Training starts at 8:15 a.m. Hand lens and sweep nets will be available for use if needed.

For more information, to register or for directions, contact Lisa Dorey at 302-856-7303 (ph), 302-856-1845 (fax) or [dorey@udel.edu](mailto:dorey@udel.edu).



<b>Weather Summary</b>	
<b>Week of July 12 to July 18, 2001</b>	
<b>Rainfall:</b>	July 18: 0.51 inches
Readings taken for the previous 24 hours at 8 a.m.	
<b>Air Temperature:</b>	Highs Ranged from 91°F on July 17 to 77°F on July 18.
	Lows Ranged from 69°F on July 18 to 57°F on July 13 & 14.
<b>Soil Temperature:</b>	76°F average for the week.
(Soil temperature taken at a 2 inch depth, under sod)	

Web Address for the U of D Research & Education Center:  
<http://www.rec.udel.edu>

*Compiled and Edited By:*

*Tracy Wootten  
Extension Associate - Vegetable Crops*

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