



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 20, Issue 9

May 18, 2012

Signing Off of WCU - *Bob Mulrooney, Extension Plant Pathologist*; bobmul@udel.edu

After 38 years with the Cooperative Extension System at the University of Delaware I will be retiring officially at the end of June and this will be my last contribution to Weekly Crop Update. After three years as the assistant county agent in Kent County I had the opportunity to go to Newark and take the Extension Plant Pathologist position in the fall of 1977. It has been a wonderful career and I have had the pleasure of working with great colleagues at UD and our clientele in the agronomic crops, vegetable, and ornamentals industries. I will be out of the office beginning May 18. Plant samples will continue to be handled by Nancy Gregory in the Diagnostic Clinic as in the past. If you need help with any plant disease issues contact the county Extension agents first and they can help you, or find someone who can. As for the **Nematode Assay Service**, I have agreed to help continue this service in retirement. The Nematode Assay Service will continue to be part of the Plant Diagnostic Clinic, which will continue to be the point of contact for those services. **There will not be any soil accepted for nematode testing from May 16 until July 1.** If you have any questions please contact Nancy Gregory at 302-831-1390, or our website <http://ag.udel.edu/plantclinic>.

The Nematode Assay Program fees for service (effective July 1) are:

- Routine nematode assay, includes enumeration of plant parasitic nematode larvae- \$20

- Routine nematode assay for plant parasitic nematodes for tree fruits and grape - \$25 (Counting of individuals is necessary for *Xiphinema* nematodes often found in these samples which takes more time.)
- Soybean cyst nematode (SCN) egg assay - \$10
- Routine nematode assay plus SCN egg assay - \$30



*We will miss you, Bob.
Best wishes for your
retirement!*

Vegetable Crops

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

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. In many fields, lady beetle populations are high and have helped to keep aphid populations in check. We continue to find cucumber beetles, especially in cantaloupe fields. Populations can explode so be sure to scout carefully since damage can occur quickly. Since beetles can continue to re-infest fields as well as hide under the plastic, multiple applications are often needed to achieve control.

Peppers

Be sure to sample for thrips and corn borers. On young plants, corn borer larvae can bore into the stems and petioles. In areas where peppers are isolated or corn is growing slowly, moths are often attracted to young pepper plants.

Therefore, you should watch for corn borer moths laying eggs in all fields. As a general guideline, treatment may be needed if there is no corn in the area or you are using rye strips as windbreaks. You should also look for egg masses on the leaves. For the most recent trap catches, you can check our website at

<http://ag.udel.edu/extension/IPM/traps/latestbit.html> or call the Crop Pest Hotline (in state: 1-800-345-7544; out of state: 302-831-8851).

Snap Beans

Continue to sample all seedling stage fields for leafhopper and thrips activity. The thrips threshold is 5-6 per leaflet and the leafhopper threshold is 5 per sweep. If both insects are present, the threshold for each should be reduced by $\frac{1}{3}$. In addition, be sure to watch for bean leaf beetle. Damage appears as circular holes in leaves and significant defoliation can quickly occur. As a general guideline, a treatment should be considered if defoliation exceeds 20% prebloom.

Sweet Corn

Continue to sample for cutworms and flea beetles. As a general guideline, treatments

should be applied if you find 3% cut plants or 10% leaf feeding. In order to get an accurate estimate of flea beetle populations, fields should be scouted mid-day when beetles are active. A treatment will be needed if 5% of the plants are infested with beetles. On the earliest planted fields, be sure to watch for larvae feeding in the whorls. A treatment should be applied if 15% of the plants are infested. Corn earworms can also be found in light traps and pheromone traps. You can call the Crop Pest Hotline for the most recent trap catches (in state: 1-800-345-7544; out of state: 302-831-8851) or check our website at

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

Pea Harvest Began Early - *Gordon Johnson, Extension Vegetable & Fruit Specialist*; gcjohn@udel.edu

Pea harvest began around May 15 this year. This is the earliest harvest in recent memory. Early peas under irrigation have exceeded 4000 lbs/a. Areas outside of pivots and without irrigation were hit hard by the early drought this year and are yielding less than 2000 lbs/a. Current weather has been favorable for pea development.

MELCAST Fungicide Scheduling for

Watermelon - *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland*; keverts@umd.edu

Gummy stem blight (caused by *Didymella bryoniae*) is the most important foliar disease of watermelon in Maryland and Delaware. The disease affects leaves (Fig. 1), stems and vines of watermelon, resulting in fewer and smaller fruit. Anthracnose (Fig. 2), which is caused by *Colletotrichum orbiculare*, also occurs yearly. In MD and DE, yield losses due to gummy stem blight and anthracnose of 20 to 100% would occur in the absence of effective fungicidal control.

Beginning in 1997 the DE IPM, MAR-DEL Watermelon growers, Maryland Vegetable

growers, and other grant funds have supported dissemination of a weather-based fungicide application program for watermelons, Melcast. Melcast is a weather-based spray advisory program for watermelon developed at Purdue University. The program uses hours of leaf wetness and temperature during leaf wetness periods to determine when a fungicide should be applied. In MD and DE, we have slightly modified Melcast so that fungicides are scheduled earlier. As a result, fungicides scheduled by Melcast, successfully manage anthracnose and gummy stem blight. Growers that use Melcast report reducing their fungicide applications by two per season compared to standard schedules. Six research trials were conducted over three years in our region to evaluate Melcast. In four of those trials yield was the same when sprays were applied according to Melcast compared to weekly applications. In one trial yield was higher, and in one trial yield was lower, when sprayed according to Melcast in comparison to weekly sprays.

Since our original trials of Melcast, several newer and highly effective fungicides have been registered for gummy stem blight and anthracnose. We are testing Melcast again with these effective materials. To use Melcast on your farm, please call Karen Adams at (302)856-7303 and give us your name and Fax number or e-mail address. More details about how the program works are available at our Disease Forecasting Web page: <http://mdvegdisease.umd.edu/forecasting/index.cfm>



Figure 1. Large dark brown foliar lesions of gummy stem blight



Figure 2. Anthracnose lesions on cucurbits are angular in appearance. Tiny black spots can be seen through a hand lens in the tan centers of lesions.

Tissue Testing and Petiole Sap Testing for Vegetables - Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Recommended fertility programs for vegetable crops are given in the Commercial Vegetable Production Recommendations publication for Delaware and surrounding states. See <http://ag.udel.edu/extension/vegprogram/publications.htm> for an electronic version.

While these recommendations should be the base of a fertility program, additional monitoring of plant nutritional status is recommended, especially for highly managed crops such as those grown in plasticulture where fertilizers can be injected through the drip irrigation system.

Tissue testing involves taking samples from the plant at various times during the growth period, most commonly leaves, and sending them to a laboratory for mineral nutrient analysis. Petiole sap testing involves taking leaf petioles and expressing the sap which is then tested for nitrate and/or potassium using portable meters.

When taking tissue samples specific procedures should be followed to obtain reliable results. The following are recommendations from the University of Florida.

“The sample is a whole leaf sample and it should not contain any root or stem material. For sweet corn or onions, the leaf is removed just above

the attachment point to the stalk or bulb. For compound leaves (carrots, peas, tomatoes, etc.), the whole leaf includes the main petiole, all the leaflets and their petiolules. For heading vegetables, it is most practical to take the outermost whole wrapper leaf. When sampling particularly young plants, the whole above-ground portion of the plant may be sampled."

Most commonly the most recently matured leaves (MRML) are used for analyses. Most-recently-matured leaves (MRML) are leaves that have essentially ceased to expand and have turned from a juvenile light-green color to a darker-green color.

"A proper leaf sample should consist of about 25 to 100 individual leaves. The same leaf (i.e., physiological age and position) should be removed from each sampled plant. Plants damaged by pests, diseases, or chemicals should be avoided when trying to monitor the nutrient status of the crop. Individual plants, even side-by-side, may have a considerably different nutrient status. Therefore, by sampling a sufficiently large number of plants, the error due to this variability can be minimized. More accuracy in determining the actual nutrient status is derived from a larger sample size."

"Samples are often contaminated by fungicides, nutrient sprays, soil, or dust. Data obtained from contaminated leaf samples will be misleading. Decontamination of some dust or soil is best accomplished by quickly rinsing in a dilute non-phosphate detergent solution (2%) followed by two distilled water rinses. Tap water should not be used because it can be high in certain nutrients such as Ca, Fe, Mg, or S. Leaf samples should be washed quickly to minimize the leaching of certain nutrients (especially K) from the leaves."

"Following rinsing, the sample should be blotted dry with absorbent paper. The samples should be air-dried for several hours before shipment. If a plant analysis mailing kit is not available, the samples should be wrapped in fresh absorbent paper and placed in a large envelope (plastic bags must not be used). The sample should be shipped or delivered immediately to the soil and plant analysis laboratory. An air-dried sample, if

loosely packed to avoid rotting, will last two to three days before decomposition begins."

"If the samples must be held for any length of time before shipping, they should be dried at 150°F in a ventilated oven (leave the door ajar) until dry weight is constant. Once dried, the sample can be placed in a plant analysis mailing kit or a large envelope. This ensures the integrity of the sample until shipping is possible."

Petiole sap testing is useful for monitoring nitrogen and potassium and can give very quick results with the use of portable meters. The following are guidelines for petiole sap testing from the University of Florida:

"For sap testing, petioles collected from most recently matured leaves (MRML) are used for analyses. Most-recently-matured leaves (MRML) are leaves that have essentially ceased to expand and have turned from a juvenile light-green color to a darker-green color. A random sample of a minimum of 25 petioles should be collected from each "management unit" or "irrigation zone." Management units larger than 20 acres should be subdivided into 20-acre blocks. Leaves with obvious defects or with diseases should be avoided. Sampling should be done on a uniform basis for time of day (best between 10 AM and 2 PM), and for interval after rainfall or fertilization."

"Whole leaves are collected from the plant and the leaf blade tissue and leaflets are then stripped from the petiole. A petiole of several inches in length remains. Petioles are chopped into about one-half inch segments. If analysis is not to be conducted immediately in the field, then whole petioles should be packed with ice and analyzed within a few hours of collecting. Given more extreme environmental field conditions (high temperature and bright sun), more dependable results are obtained by making measurement in the lab or office than outdoors."

"Chopped petiole pieces are mixed and a random subsample (about ¼ cup) is crushed in a garlic press, lemon press, or hydraulic press (obtainable from HACH Co., Table 4). Expressed

sap is collected in a small beaker or juice glass and stirred."

Follow the instructions for the specific meter you are using to analyze the sap. If sap has too high of concentration of nitrate or potassium for your meter, then you will need to dilute the sap to conduct the test.

Information on tissue testing and petiole sap testing for vegetables including tables with recommended levels at different growth stages can be found at this site <http://edis.ifas.ufl.edu/ep081>.

The following are recommended values for watermelons:

Plant Tissue Macronutrient Ranges for Watermelons at Different Growth Stages

Crop	Plant Part	Time of Sampling	Status	----- % -----					
				N	P	K	Ca	Mg	S
Watermelon	MRM* leaf	Vining before flowering	Deficient	<3.0	0.3	3.0	1.0	0.25	0.2
			Adequate range	3.0	0.3	3.0	1.0	0.25	0.2
				4.0	0.5	4.0	2.0	0.5	0.4
			High	>4.0	0.5	4.0	2.0	0.5	0.4
	Toxic (>)	-	-	-	-	-	-		
	MRM leaf	First flower	Deficient	<2.5	0.3	2.7	1.0	0.25	0.2
			Adequate range	2.5	0.3	2.7	1.0	0.25	0.2
				3.5	0.5	3.5	2.0	0.5	0.4
	High	>3.5	0.5	3.5	2.0	0.5	0.4		
	MRM leaf	First fruit	Deficient	<2.0	0.3	2.3	1.0	0.25	0.2
			Adequate range	2.0	0.3	2.3	1.0	0.25	0.2
				3.0	0.5	3.5	2.0	0.5	0.4
	High	>3.0	0.5	3.5	2.0	0.5	0.4		
	MRM leaf	Harvest period	Deficient	<2.0	0.3	2.0	1.0	0.25	0.2
			Adequate range	2.0	0.3	2.0	1.0	0.25	0.2
				3.0	0.5	3.0	2.0	0.5	0.4
High	>3.0	0.5	3.0	2.0	0.5	0.4			

*MRM - most recently matured leaf with petiole.

Petiole Sap Nitrate and Potassium Concentration Ranges for Watermelon

Crop	Stage of Growth	Fresh Petiole Sap Concentration (ppm)	
		K	NO ₃ -N
Watermelon	Vines 6-inches in length	4000 to 5000	1200 to 1500
	Fruits 2-inches in length	4000 to 5000	1000 to 1200
	Fruits one-half mature	3500 to 4000	800 to 1000
	At first harvest	3000 to 3500	600 to 800

Late blight Advisory

Location: Art and Keith Wicks Farm, Rt 9, Leipsic, Kent County

Greenrow: April 20

Date	DSV	Total DSV	Spray Interval Recommendations
4/20 - 4/30	12	12	None
4/30 - 5/1	8	20	7-days
5/1 - 5-8	15	35	5-days
5/8 - 5/10	4	39	5-days
5/10 - 5/13	0	39	10-days
5/13 - 5/16	5	44	7-days

The threshold of 18 DSVs has been exceeded. Forty-four (44) DSVs have accumulated as of Thursday, May 17. This includes any potatoes that established green row (approximately 50% emergence) prior to and on April 20. An additional five (5) DSVs accumulated during the recent wet, cloudy weather earlier in the week. While the spray interval has been lowered, the short-term forecast is predicting ample sunshine and warm temperatures. This should reduce the risk of late blight development.

Agronomic Crops

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

Alfalfa

Potato leafhoppers are now present in fields so be sure to sample on a weekly basis after the first cutting. Once the damage is found, yield loss has already occurred. The treatment thresholds are 20 per 100 sweeps on alfalfa 3 inches or less in height, 50 per 100 sweeps in 4-6 inch tall alfalfa and 100 per 100 sweeps in 7-11 inch tall alfalfa.

Field Corn

During the past week, we have seen an increase in the number of no-till fields with economic damage from cutworms. Damage has mainly occurred in fields that were not treated with a cutworm product at planting. Be sure to scout fields carefully for cutworms - in some cases you will need to check fields twice a week to be sure you do not miss an economic population. In addition to cut plants, be sure to watch for leaf feeding which can be an indication of the potential for significant cutting damage and yield loss.

Slugs continue to be a problem in later planted fields. In fields where Deadline MPs have been applied at a rate of 10 lbs. per acre and the distribution of pellets is at 5 per square foot, control has been very good. The best control with the Deadline M-Ps (up to 2 weeks in some cases) has been observed when applications were made and there was at least one day of sunny weather after an application.

Small Grains

We continue to find armyworms and cereal leaf beetles in barley and wheat fields that were not treated. Population levels remain variable throughout the state so scouting fields will be the only way to determine if an economic level is present. Although armyworm can attack both wheat and barley, they can quickly cause significant losses in barley. Heavy defoliation of the flag leaf can result in significant economic loss. Armyworms generally begin head clipping when all vegetation is consumed and the last succulent part of the plant is the stem just below the grain head. Larvae can feed on the kernel tips of the wheat, resulting in premature ripening and lower test weight.

As barley and wheat approach harvest, the treatment options change due to the pre-harvest

interval (the waiting period between application and harvest). In addition, not all materials are labeled on both crops so be sure to carefully read all labels - *remember the label is the law*.

Soybeans

As the earliest beans emerge, be sure to watch carefully for slug damage. Remember, if you had a problem in past years, the slugs may still be present in fields and can quickly damage soybeans if present as plants emerge. Be sure to also watch fields carefully for bean leaf beetles and grasshoppers. Small grasshoppers have already been detected in fields before planting. Early detection and control of small grasshoppers is necessary to achieve control. *As a reminder, OP insecticides (examples - dimethoate or Lorsban) cannot be combined with SU/ALS herbicides.* Since other materials may also state restrictions regarding combinations of insecticide and herbicides, you should be sure to check all labels carefully before combining insecticides and herbicides.

Postemergence Corn Products to Provide Residual Weed Control - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Some corn fields need to be sprayed for weeds, but the corn is only 3 to 4 collars. In many ways this is good because the corn leaves will not interfere with herbicide spray pattern and will allow for maximum control. However, that means it may be two to three weeks until the corn canopies over. So relying on glyphosate or Liberty for postemergence weed control, could run into situations of weeds emerging between the postemergence sprays and the time corn canopies over. You should consider a residual herbicide in this scenario. Be sure to read individual labels for information on maximum corn size and recommended adjuvants. The following table of products will help with your selection:

Table of Corn Herbicides

Herbicide ¹	POST activity ²	Control of:		
		Broadleaf	Morningglory	Grasses
Atrazine	Yes	Yes	Yes ³	No
Callisto	Yes	Yes	No	No
Capreno	Yes	Yes	No	Limited
Halex	Yes	Yes	No	Yes
Impact**	Yes	Yes	No	##
Laudis**	Yes	Yes	No	##
NorthStar	Yes	Yes	No	No
Permit Plus	Yes	Yes	No	No
Resolve	Yes	Yes	No	Yes
Dual	No	Some	No	Yes
Prowl H2O	No	Some	No	Limited
Warrant	No	Some	No	Yes

¹Other herbicides maybe be available, but the list includes those UD Weed Extension has evaluated.

²Refers to control of emerged weeds, provided those species are susceptible to the herbicide

³Level of control depends on rate. For residual control of morningglory, rates should be at least 1.25 lbs ai/A

##No local data

Grain Marketing Highlights - Carl German,
Extension Crops Marketing Specialist;
clgerman@udel.edu

Weekly Crop Progress 05/13

U.S. corn planting was reported to be 87 percent complete with 56 percent emerged as of Sunday May 13. U.S. soybean planting was 46 percent complete and 19 percent emerged. Winter wheat was 72 percent headed with overall conditions in much better shape than last year. Spring wheat and barley were also reported to be well ahead of the five year average for planting and emergence.

USDA Export Sales Report 05/17

Pre-report estimates for the week ending May 10 placed weekly corn export sales at 31.5 to 55.1 million bushels. Total export sales for the week were recorded at 34.1 million bushels with 13.4 million scheduled for the current marketing year. This was above the 13.1 million bushels needed this week to stay on pace with USDA's export projection of 1.7 billion bushels. Weekly shipments of 26.2 million bushels were below the 35.5 million bushels needed this week. This report is viewed as slightly bearish.

Pre-report estimates for weekly export sales of soybeans ranged from 40.4 to 58.8 million bushels. Total export sales were reported at 24.7 million bushels with 22.6 million scheduled for '11/'12. This was well above the 2.8 million bushels needed this week to stay on pace with USDA's export demand projection of 1.315 billion bushels. Shipments of 20.9 million bushels were well above the 13.8 million bushels needed this week. This report is viewed as bullish.

Pre-report estimates for wheat exports ranged from 14.7 to 29.4 million bushels. Total export sales were reported at 26.1 million bushels with 11.8 million bushels scheduled for the current year. This was above the 3.6 million bushels needed this week to stay on pace with USDA's demand projection of 1.025 billion bushels. Weekly shipments of 24.9 million bushels were below the 33.9 million bushels needed this week. This report is viewed as bearish.

Market Strategy

The U.S. wheat harvest is expected to begin at least two to three weeks early this year paving

the way for the likelihood that more acres will go to double crop soybeans, possibly increasing 2012 U.S. soybean acreage by another 2 million acres (+ or -). Even so, old crop and new crop soybean supplies will remain at tight levels.

The commodity markets continue to grind along as the 2012 growing season gets well underway. The recent sell-off created buying opportunities for commercial and non-commercial traders in the near term. China was rumored to have made large purchases of U.S. corn and soybeans this week coming on the back of slightly bearish corn and bullish soybean sales for the week ending May 13. For the moment this was fundamentally price supportive.

The equities markets are experiencing a backlash from the EU with major resistance getting in the way of needed financial reforms. It remains to be seen whether the Euro remains intact. World equity and commodity markets will be impacted by the outcome. The U.S. dollar has strengthened every day for the past two weeks as a result of the ongoing uncertainty in the European Union.

The new crop corn price has recovered about 20 cents per bushel from the low of last week's sell-off. New crop SRW wheat has rebounded about 40 cents per bushel. New crop soybeans are only showing a single digit gain. Uncertainty abounds. Currently, Dec '12 corn futures are trading at \$5.28; Nov '12 soybeans at \$13.09; and July SRW wheat at \$6.41 per bushel.

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

Announcements

University of Delaware Small Fruit Twilight

Tuesday, May 22, 2012 6:00-8:00 p.m.

Carvel Research and Education Center

16483 County Seat Highway

Georgetown, DE 19947

Participants will have the opportunity to tour experimental plots and hear about current research on

June-bearing and day-neutral strawberries, blueberries and blackberries.

Strawberry research includes plasticulture variety trials with USDA selections from the Beltsville breeding program; summer planted and overwintered day neutral varieties; spring 2011 planted, overwintered, and crown thinned day neutral varieties for summer 2012 production; use of shade cloth and reflective mulch for temperature reduction in day neutral strawberries; and root inoculant and mustard seed meal treatments for root health and soil disease management in strawberries.

Blueberry research includes a 2011 planted variety trial with southern highbush selections; a mulching material study; and a planting hole treatment study.

Blackberry plots are concentrated on evaluating primocane bearing fall fruiting varieties from the University of Arkansas breeding program.

Also featured will be insect management programs and emerging insect pests of small fruits (spotted wing Drosophila). Extension specialists and associates will be on hand to lead the tour and answer questions.

Strawberry tastings and light refreshments served.

To register, contact Karen Adams at (302) 856-2585 ext. 540 or email adams@udel.edu

For additional program information, contact Gordon Johnson, gcjohn@udel.edu, (302)-856-2585 ext. 590, gcjohn@udel.edu.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of May 10 to May 16, 2012

Readings Taken from Midnight to Midnight

Rainfall:

0.05 inch: May 3

0.25 inch: May 9

Air Temperature:

Highs ranged from 82°F on May 16 to 66°F on May 10.

Lows ranged from 64°F on May 15 to 45°F on May 11.

Soil Temperature:

66.1°F average

Additional Delaware weather data is available at http://www.deos.udel.edu/monthly_retrieval.html and <http://www.rec.udel.edu/TopLevel/Weather.htm>

Weekly Crop Update is compiled and edited by Emmalea Ernest, Extension Associate - Vegetable Crops

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