



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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June 15, 2001

Vegetables

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

Potato Leafhoppers.

Be sure to watch carefully for leafhoppers in alfalfa, soybeans, snap beans, and potatoes. We are starting to see increases in populations of adults and nymphs in all of the previous crops. The recent hot weather will result in increased damage from nymphs. In addition, adults have been laying eggs for approximately one month and the warm weather will result in significant egg hatch. Once you see damage (yellowing, stunting, or "hopper burn" on leaf edges), yield loss has already occurred. Be sure to apply treatments soon after threshold levels are detected to avoid yield loss. The following treatment thresholds should be used:

Crop	Treatment Threshold
Alfalfa	3 inch or less in height - 20/100 sweeps
	4-6 inch in height - 50/100 sweeps
	7-11 inch in height - 100/100 sweeps
	12 inches or taller - 150 /100 sweeps
Soybeans	8 per sweep
Potatoes	0.5 - 1 per sweep or 1 nymph/10 leaves
Snap Beans	5 per sweep

Melons.

Aphid populations have increased again so be sure to scout carefully and apply treatments before significant leaf curling occurs. The treatment threshold for aphids is 20% infested plants with at least 5 aphids per leaf. Actara, Fulfill, Lannate and Thiodan are labeled on melons and will provide melon aphid control.

Peppers.

In areas where corn borer trap catches are above 2 per night and pepper fruit is 1/2 inch in size or larger, fields should be sprayed on a 7-10 day schedule for corn borer control. If Orthene or Address are used, it will also control pepper maggot. If Lannate, Spintor or pyrethroids are used, then dimethoate should be added to the mix. Be sure to check local trap catches updated on the IPM website three times per week (<http://www.udel.edu/IPM/traps/latestblt.html>).

Potatoes.

We have started to see an increase in green peach aphid activity in fields where Admire was not used at planting. Before 2 weeks from harvest, the threshold is 4 aphids per leaf. Within 2 weeks from harvest, the treatment threshold increases to 10 aphids per leaf. Provado or Fulfill will provide control.

Snap Beans.

In the Dover, Laurel, Greenwood and Seaford areas, fresh market and processing snap beans in

the bud to pin stage should be sprayed for corn borer. Orthene or Address should be used at the bud and pin stages on processing beans. Once pins are present on fresh market snap beans, a 7-10 day schedule should be maintained for corn borer. Lannate, Asana or Capture are labeled. We continue to see an increase in thrips activity in seedling stage snap beans. A treatment is needed if you find 5-6 thrips per leaflet. Asana, Capture, Dimethoate or Orthene will provide thrips control.

Sweet Corn.

Economic levels of corn borer continue to be found in whorl stage corn. From the whorl to pretassel stage, a treatment should be applied if 15% of the plants are infested. Early planted sweet corn should be sprayed on 6-day schedule in most areas of the state except in the Bridgeville area where sprays should be applied on a 4-5 day schedule. Be sure to check local trap catches updated on the IPM website three times per week (<http://www.udel.edu/IPM/traps/latestblt.html>).



Peas – Water Congestion and Irrigation - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu

During the week of June 4, we experienced heavy rains at some locations. Some pea fields experienced what is known as “water congestion.” First symptoms appear as very small water-soaked spots near the outer edge and underside of the foliage. These spots can increase in size and number until the outer and terminal portions of leaves and stipules are completely water-soaked and appear darker green than normal tissue. Eventually these areas die. Severe water congestion can destroy 75% of the foliage at one to several nodes. Fortunately, we have not seen anything close to this level of damage.

It is caused by the growing conditions of high humidity, high temperatures, and high soil moisture. Simply said, the water does not

transpire out of the leaves, but water logs that tissue, causing death.

Sunny weather reduces or stops the condition.

With high temperatures we are now experiencing, it is important to remember that peas are using as much as a quarter-inch of water per day. Keeping adequate soil moisture is critical to setting and filling pods to their potential. Manage the irrigation to maintain soil moisture, but stop irrigating early enough to facilitate harvest operations. Keeping in touch with your processing company field staff is important.

Vegetable Diseases - - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Potatoes.

Late Blight Update

Disease Severity Value (DSV) Accumulations as of June 13, 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

Potatoes that have reached greenrow (50% emergence) since May 18, have all reached more than 18 DSV’s.

Growers should be applying a fungicide for **late blight** control at this time. **Early blight** susceptible varieties will also benefit from a

fungicide application now that 363 P-days have accumulated. The early blight prediction model indicates that early blight spores may be present now.

Gold /Bravo, or Flouronil between the time the potatoes are nickel-sized until flowering, and repeat 14 days later.



To control **pink rot** caused by *Phytophthora erythroseptica* and *P. nicotianae*, and leak caused by *Pythium* apply Ridomil Gold MZ, Ridomil

Vegetable Diseases - *Kate Everts, Extension Vegetable Pathologist, University of Delaware and University of Maryland; everts@udel.edu*

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	6/6	6/7	6/8	6/9	6/10	6/11	6/12	6/13
Bridgeville, DE		1	1	1	0	0	1	0
Laurel, DE (Collins Farms)		1	1	1	1	3	2	2
Galestown, MD		1	1	1	1	1	2	2
Georgetown, DE	1	2	1	1	1	0	2	1
Hebron, MD		1	1	1	1	1	2	2
Salisbury, MD		2	2	2	2	2	2	3
Laurel, DE (Vincent Farms)		1	2	1	1	1	1	0

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

What Is In Those Soybean Herbicide Pre-Mixes? - *Mark VanGessel, Extension Weed Specialist; mjv@udel.edu*

The following is a summary of the products in commonly used pre-mixes for postemergence soybean herbicides. This is meant as a reference point to compare the amount of various products based on the use rate that is appropriate for you.

Premixes	Component Products
Conclude B&G (co-pack) B at 1.5 pt G at 1.5 pt	1 pt Basagran 4L plus 1 pt Blazer 2L 1.5 pt Poast Plus 1.5E
Extreme 2.17 WS at 3 pt	1.44 oz Pursuit 70 DG plus 1.5 pt Roundup original
Stellar 3.1E at 5 fl oz	6 fl oz Cobra 2E plus 4 fl oz Resource 0.86E
Storm 4S at 1.5 pt	1 pt Basagran 4S plus 1 pt Blazer 2S
Synchrony STS 42DF at 0.5 oz	0.64 oz Classic 25DF plus 0.20 oz Pinnacle 25DF
Typhoon 1.41E at 1.6 qt	0.75 pt Fusilade DX 2E plus 1.5 pt Reflex 2S



New Herbicide for Field Corn - Mark VanGessel,
Extension Weed Specialist; mjv@udel.edu

There was an error in the heading of the article on New Herbicide for Field Corn in Issue 11 of Weekly Crop Update. It states in the article that **Callisto is now labeled for Field Corn**, but the heading reads “New Herbicide for Sweet Corn”. I apologize for the error and the correct article is printed below.

Callisto is a new field corn herbicide from Syngenta that provides broad-spectrum broadleaf weed control. The one grass weed it has good activity on is crabgrass. The active ingredient in Callisto is a new product, mesitrione. This product can be used both preemergence and postemergence. Postemergence rate is 3 fluid oz and the label says it needs to be mixed with crop oil concentrate and a nitrogen source (UAN or AMS). Most broadleaf weeds are listed for 5 inches or less. Label states not to use on corn treated with Counter or Lorsban. Rotational restriction for small grain is 4 months and the following year for all other crops. Callisto can be sprayed over 30 inch corn and is rainfast in one hour. Supplies may be limited for this use season.

Touchdown IQ on Roundup Ready Soybeans -
Mark VanGessel, Extension Weed Specialist;
mjv@udel.edu

The injury experienced last year with Touchdown 5 should not be seen with Touchdown IQ. Last year we saw injury to Touchdown on Roundup Ready soybeans. The injury was similar to Blazer injury. Many people included 1 to 2 oz of Basagran to reduce this injury. This year we have Touchdown IQ which is a new formulation and does not result in the injury. As a result, there is no need to apply Basagran to the Touchdown IQ.



Postemergence Options in Soybeans - Mark
VanGessel, Extension Weed Specialist; mjv@udel.edu

Spraying glyphosate (Touchdown, GlyphoMax, Roundup Ultra) over the top of Roundup Ready soybeans provides a wider window of application for effective control than with most conventional soybean herbicides. Evaluate conventional soybeans for postemergence sprays 14 to 21 days after planting. The smaller the weeds are the more options you have to control them, and control will be better. Conventional (non-Roundup Ready)

soybeans should be treated earlier than Roundup Ready soybeans. Most conventional soybean herbicides have residual control that allows you to use them early and not need a second application. Roundup Ready soybeans should be treated three to four weeks after planting for conventionally tilled fields and three to five for no-till fields. The narrower window for spraying conventionally tilled, Roundup Ready soybean fields compared to no-till fields is due to moisture conservation.



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

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Soybeans.

In looking at full season no-till beans and fields recently planted into barley stubble, we are seeing a significant increase in grasshopper feeding

damage. Grasshoppers have moved out of ditch banks and grassy edges into the main section of fields. An edge treatment will only be effective if applied before grasshoppers move into fields. The treatment threshold is 1 per sweep **and** 30% defoliation. Asana, Furadan, Lorsban, or Warrior will provide control. Remember that multiple applications may be needed. Unfortunately, we are also starting to see an increase in **spider mite** activity in no-till full season soybeans. Look for the white stippling at the base of the leaves, which indicates the presence of mites. Treatment will be needed when you find 20-30 mites per leaflet or 10% of plants with 1/3 or more leaf area damaged. We **did not** submit for a Section 18 for Danitol this year since the company is not pursuing a federal registration on soybeans. Therefore, EPA would not approve a Section 18 request. We continue to look at potential options for the future. Dimethoate, Lorsban and Parathion (aerial application only) are the only available options, so early detection and control will be critical. If dimethoate is used, the addition of a penetrant like LI-700 or AD 100 has been shown to improve the performance.



Field Crop Diseases - - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Anthracoze Identified in Field Corn.

No-till corn in heavy corn residue ground can become infected by anthracnose early in the season when water and humidity are present. The fungus can kill the oldest leaves but the newer leaves, although spotted, survive and the new growth is usually clean. Seedlings and mature plants are the most susceptible. The warm weather will help the corn outgrow the fungus. I have seen this happen in past seasons. According to the Corn Compendium 3rd Edition, leaf blight resistance is not highly correlated with resistance to anthracnose stalk rot. This is important when checking hybrids for resistance to anthracnose. You need to know what phase of the disease they are referring to when you see resistance listed.

Crop rotation and tillage of crop residues may reduce early season leaf blight, but may have little to no effect on late season leaf blight and stalk rot.

Symptoms: Anthracnose lesions on leaves vary greatly in size and shape but are generally less than 1" long with dark tan centers, brown borders and yellowish to orange halos. Lesions generally appear first near the leaf tip and the midrib of the leaf, then coalesce to produce large dead areas and blotches. Black hair-like structures (setae) emerging from fruiting bodies (acervuli) can be seen with a hand lens during periods of high humidity. This last sign is the best for positively identifying anthracnose.



Anthracnose leaf blight on corn



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

U.S. Grain Stocks Decline in Crop Estimates
USDA's June 12th Supply and Demand Report can be viewed as neutral to slightly bullish for U.S. corn, soybean, and wheat prices. The primary reason being the reduction seen in ending stocks projections across the board for the 2001/2002 marketing year (new crop). Currently, the ending stocks estimates for the new marketing year for corn and wheat are less than the 2000/2001 marketing year ending stocks levels. Ending stocks for U.S. corn are currently projected at 1.893 billion bushels for the 2001/2002 marketing year. It is important to note that although ending stocks for new crop corn were reduced, ending stocks for old crop corn were increased by 50 million bushels, now placed at 2.048 billion bushels.

Ending stocks for U.S. wheat were also decreased for the new marketing year estimate, and increased for the old crop. Ending stocks for U.S. wheat were estimated at 585 million bushels for the new marketing year, a 6 million bushel reduction from May, and increased 29 million bushels for the 2000/2001 marketing year.

Ending stocks for U.S. soybeans were decreased for both the old and new marketing years. Ending stocks for the new marketing year were estimated at 440 million bushels, a 60 million bushel decrease in the estimate from last month primarily due to increases in crushings and exports. Old crop soybean ending stocks were also reduced by 25 million bushels.

World stocks for corn and soybeans were increased since last month, while world wheat stocks were reduced.

General Comments

The positive reaction to this report should be that it shows U.S. commodity stocks headed in the right direction. We are still looking at the possibility of commodity prices going either way depending upon U.S. crop development for the 2001 harvest. Dec. corn is currently trading at \$2.16, Nov. soybeans at \$4.57, and July wheat at \$2.62 per bushel. It is important to note that Dec. '01 wheat is currently trading at a 26 cent per bushel premium to the July contract.



Uneven and Variable Corn Stands - Richard W. Taylor, *Extension Agronomist;* rtaylor@udel.edu

After visiting many fields including some of my own demonstration fields, it is quite evident that there are a lot of uneven and variable stands of corn out there this year. I thought I would share a few thoughts on the possible causes.

First, a lot of the variation in corn emergence seems to be associated with changes in soil moisture holding capacity. Since we had very



variable rainfall early in the season and then little to no rain from mid-April through mid-May, a lot of corn was planted in soil that was marginal for available soil moisture. In much of the field, the planters did an excellent job obtaining good soil seed contact and placing the seed deep enough to reach moisture so this corn emerged. However, wherever the soil moisture was not adequate, you can see irregular shaped patterns in the field where corn did not emerge until the rains in mid- to late-May. In fields with compaction, and in fields that were no-tilled but soil conditions were unfavorable or slot closure was inadequate, uneven emergence was an even more serious problem. I also have seen evidence that this late-emerging corn suffered more severe bird damage, cutworm damage, and slug damage. Slug damage especially was prevalent under no-till conditions during May when we had a week or more of wet weather. Leaf diseases such as anthracnose have also been identified and if combined with the nitrogen and potash conditions I've seen in fields means much corn has really been stressed so far this season.

What does uneven emergence mean to yield potential? Generally, the rule-of-thumb says that any corn seedling that is more than three leaves behind the majority of the field will act as a weed and contribute little if anything to yield. I am not convinced that that will be the case this year at least for the corn in the larger delayed-emergence areas. Wherever you find just a few scattered plants that emerged late, you should consider these as weeds in a field and not count them in any population estimates for yield purposes. However, for those areas where the majority of the plants emerged much later and you can see only a scattering of large corn plants that emerged on time with the rest of the field, I think these small plants will contribute to yield. There should be enough of these late plants to provide adequate pollen shed to ensure pollination. Yield potential will be slightly lower due to the late emergence date but since most emerged by mid-May these areas should make 80 to 90 percent of the yield of the larger, early-emerged plants.

Is It Nitrogen or Potash Deficiency? - *Richard W. Taylor, Extension Agronomist; rtaylor@udel.edu*

In walking through corn fields in the last week or two, the question has come up as to whether the symptoms on the lowest leaves show nitrogen (N) or potash [potassium (K)] deficiency or whether it is just the normal die back of the first few seedling leaves. Actually, K deficiency symptoms easily confused with either N deficiency symptoms in corn or normal leaf senescence. This is especially true when conditions favor the possibility of N deficiency (a lot of rainfall, a low starter N rate, and sidedress N has not been applied yet) and symptoms of K deficiency are severe.

In K deficiency, the initial symptom is a yellowing (and sometimes even necrotic) along the outer margins of the older leaves. As the deficiency worsens, the yellowing becomes more pronounced and progresses inward toward the mid-vein and the tissues begin to die or become necrotic. As the symptoms reach the mid-vein and most of the leaf is involved, the symptoms appear in the shape of a V. Nitrogen deficiency begins at the leaf tip, or sometimes and to some degree along the tip margins. Symptoms next progress up the mid-vein or mid-rib. Color symptoms vary from a slight yellowing to an orange-yellow color and in severe cases results in leaf tissue death. Nitrogen deficiency symptoms are often described as an inverted V on the leaf. Lower leaf senescence resembles K deficiency in part due to the mobilization of mobile nutrients and their movement to actively growing tissues. Senescence begins to occur about the time the seventh to ninth leaf emerges but the timing is influenced by weather conditions, nutrient availability, plant density (shading) and other factors. They sound easy to distinguish apart, but in the field these symptoms can be easily confused with each other. The use of low N rates in starter fertilizers, no-till cropping systems, and certain weather conditions that slow root growth favor development of N deficiency symptoms. If this

occurs when K symptoms are developing, the combination can be quite difficult to sort out.

Early detection along with appropriate supplemental fertilization (if practical in the case of K) can reduce yield losses from both deficiency conditions. Early detection requires scouting of fields at the time when the deficiency symptoms are not developed enough to be completely certain of which nutrient or nutrients are involved. By combining your scouting program with a review of recent soil test information and the use of tissue testing or in-season soil testing, you generally can identify the deficient nutrient and make corrections at a time when yield reductions can be minimized.

Potash is essential for good stalk development, reduced lodging potential, maintenance of strong disease resistance, and water regulation during periods of water stress. Although low soil potash level may not directly affect yield potential, it does indirectly impact yield potential in many ways.

Potash is important for soybean production too. Potash deficiency symptoms on soybeans begin as small yellowed or chlorotic spots on the margins of each leaflet of the lower trifoliate leaves. These combine until the entire leaf edge or margin yellows and then progresses to dead or necrotic areas giving the leaflet a tattered or scorched appearance. Yields can be affected in severe K deficiencies so early application of additional K is essential for optimum yield production.



UPCOMING MEETINGS:

Weed Science Field Day

June 27, 2001

8:15 a.m.

**University of Delaware Research and Education
Center Grove**

The University of Delaware will hold its Annual Weed Science Field Day on Wednesday June 27, starting at 8:15 am. We will meet in the Grove at the UD Research and Education Center on Rte. 9. Pesticide credits will be awarded. For More Information: contact Lisa Dorey at 302-856-7303.



Weather Summary	
Week of June 7 to June 14, 2001	
Rainfall:	June 7: 1.13 inches
Readings taken for the previous 24 hours at 8 a.m.	
Air Temperature:	Highs Ranged from 91°F on June 13 to 72°F on June 7.
	Lows Ranged from 71°F on June 13 to 58°F on June 8.
Soil Temperature:	78°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:

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