



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetables

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

Lima Beans

As soon as pin pods are present be sure to watch carefully for stinkbug and plant bug populations. As a general guideline treatment should be considered if you find 15 adults and/or nymphs per 50 sweeps. In some cases a lower threshold for stinkbugs may be needed. Since earworm moths can be found laying eggs in fields, be sure to sample for larvae as soon as pin pods are present. A treatment will be needed if you find one corn earworm larvae per 6 feet of row.

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. We continue to see rind feeding from cucumber beetles and beet armyworms. Although the pyrethroids will help to reduce cucumber beetle populations, they will not control beet armyworm. Since this insect is difficult to control, be sure to select a material that is labeled for beet armyworm on melons such as Spintor, Radiant, or Intrepid. Be sure to check all labels for days between last application and harvest.

Peppers

As soon as the first flowers can be found, be sure to consider a corn borer treatment. We are starting to see an increase in moth populations and egg masses can be found on pepper leaves.

Depending on local corn borer trap catches sprays should be applied on a 7 to 10-day schedule once pepper fruit is ¼ - ½ inch in diameter. Be sure to check local moth catches in your area by calling the Crop Pest Hotline (in state: 1-800-345-7544; out of state: 302-831-8851) or visiting our website at (<http://ag.udel.edu/extension/IPM/traps/latestblt.html>). You will also need to consider a treatment for pepper maggot. Be sure to watch carefully for beet armyworm larvae since they can quickly defoliate plants. In addition, be sure to use a material that provides beet armyworm control - the pyrethroids will not control this insect.

Snap Beans

As corn borer and corn earworm populations start to increase, you will need to consider treatments for both insect pests. Sprays are needed at the bud and pin stages on processing beans for corn borer control. As earworm trap catches increase, an earworm spray may also be needed at the pin stage. You will need to check our website for the most recent trap catches to help decide on the spray interval between the pin stage and harvest for processing snap beans (<http://ag.udel.edu/extension/IPM/traps/latestblt.html> and <http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html>). Once pins are present on fresh market snap beans, a 7 to 10-day schedule should be maintained for corn borer and corn earworm control.

Sweet Corn

Continue to sample seedling stage fields for cutworms and flea beetles. You should also sample all fields from the whorl through pre-tassel stage for corn borers, corn earworms and fall armyworm. A treatment should be considered when 12-15% of the plants are infested. Since fall armyworm feeds deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible. Be sure to check both blacklight and pheromone trap catches for silk spray schedules since the spray schedules can quickly change. Trap catches are generally updated on Tuesday and Friday mornings (<http://ag.udel.edu/extension/IPM/traps/latest/blt.html> and <http://ag.udel.edu/extension/IPM/thresh/silksp raythresh.html>). You can also call the Crop Pest Hotline (in state: 1-800-345-7544; out of state: 302-831-8851).

Irrigating Lima Beans - Gordon Johnson, *Extension Ag Agent, Kent Co.; gcjohn@udel.edu*

There is considerable controversy about when and how to irrigate lima beans for best yields. Past research has shown that irrigated lima beans significantly out-yield dry land lima beans and top yields generally come from irrigated fields. However, when and how much to irrigate is still a question as is the need to irrigate late in the season for fall harvested lima beans.

Research has suggested that irrigating when soil moisture drops to 50% of field capacity gives better yields than letting the soil dry out further for lima beans. It is also better to irrigate throughout the season rather than just from full flowering onward.

To complicate matters, over-irrigation, especially during pod development when there are very dense vines, increases the potential for pod diseases such as Sclerotinia white mold, lima bean pod blight (*Phytophthora capsici*), Pythium blight, and downy mildew and can lead to significant yield losses. A balance must be

maintained between providing needed water and allowing the crop to dry out to reduce disease pressure later in crop development.

It is also important to consider temperature. The following is from Ed Kee during a heat wave in 2006: "The tremendous heat we're experiencing makes irrigation of lima beans more critical. Blossom drop occurs when the plant is stressed, and even with adequate irrigation blossoms will abort with high temperatures. However, maintaining soil moisture is important to keep the plant cool, which alleviates stress and reduces blossom and pod drop. Lima beans will use 0.25 inches of water per day through evapotranspiration when temperatures are in the nineties. Reducing plant stress as much as possible will help in the retention of "pins" (small pods) and larger pods."

In lima beans, first flowering generally occurs at 35 days from planting, and peak flowering at 60 days. Providing adequate water with irrigation during the entire flowering period and through pod set is critical for developing and maintaining yield.

Downy Mildew on Cucumbers - Bob *Mulrooney, Extension Plant Pathologist;* bobmul@udel.edu

Downy mildew on cucumber is increasing slowly. There was a recent find near Salisbury, MD and now in Virginia Beach and Suffolk, VA on cucumber this week. The two finds in DE were light infections but growers should maintain preventative sprays for downy mildew control. Infections have been limited to cucumber so far. If the temperatures fall into the 80s and we get some more rainfall look for downy to spread to other areas. The weather pattern on Wednesday and Thursday of this week was very favorable for spread of downy mildew into the Delmarva area.

Potato Disease Advisory #20 - July 24, 2008 - *Bob Mulrooney, Extension Plant Pathologist;*
bobmul@udel.edu

Disease Severity Value (DSV) Accumulation as of July 23, 2008 is as follows:

Location: Broad Acres, Zimmerman Farm, Rt. 9, Kent County

Greenrow: April 27

Date	LATE BLIGHT			EARLY BLIGHT
	Daily DSV	Total DSV	Spray Recs	Accumulated P days*
6/22-6/23	1	45	10-day interval	418
6/23-6/25	0	45	10-day interval	435
6/26-6/30	0	45	10-day interval	466
6/30-7/2	0	45	10-day interval	482
7/2-7/3	0	45	10-day interval	489
7/4-7/5	1	46	10-day interval	496
7/5-7/6	2	48	10-day interval	505
7/6-7/7	3	51	7-day interval	514
7/7-7/9	0	51	7-day interval	536
7/9-7/10	2	53	7-day interval	544
7/10-7/13	0	53	10-day interval	566
7/13-7/14	1	54	10-day interval	575
7/14-7/16	0	54	10-day interval	589
7/16-7/20	0	54	10-day interval	608
7/20-7/23	0	54	10-day interval	622

* P days - We use the predictive model WISDOM to determine the first fungicide application for prevention of **early blight** as well. The model predicts the first seasonal rise in the number of spores of the early blight fungus based on the accumulation of 300 physiological days (a type of degree-day unit, referred to as P-days) from greenrow. To date, **622 P-days** have accumulated at the site.

Maintain fungicide applications for plants that are still green. There have been no reports of late blight on either potato or tomato in the region. There was a report on potato from Erie County, PA late last week. We probably received enough rain last night and humidity to accumulate several DSVs last night but the hot dry weather has not been favorable for late blight. No reason to change the spray interval. All the best to the growers as they begin harvest.

For specific fungicide recommendations, see the 2008 Delaware Commercial Vegetable Production Recommendations Book.

Agronomic Crops

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

Soybeans

We continue to see a number of defoliators (grasshoppers, blister beetles, Japanese beetles, green cloverworm, bean leaf beetles, yellow

striped armyworms, etc.) present in full season and double crop beans. As fields enter the bloom to pod fill stages, remember that the defoliation threshold drops.

Before the recent rain, we continued to find fields with economic levels of spider mites, especially in drought stressed areas of the state. I am sure some will assume that the rain controlled the mites and others will wonder. The

answer will depend on a number of factors. In areas of the state where you experienced heavy thunderstorms, those storms may have been forceful enough to cause direct mortality; however, scattered and infrequent showers will not reduce a heavy mite infestation. The rains of course will also help plants to grow ahead of the spider mite damage. However, if economic levels of mites are still present after fields have recovered and greened up, you should get better control, especially with dimethoate. It will also be important to spray before plants are stressed again. You will also want to check carefully to see if populations are starting to decline. Under heavy mite pressure, it often takes a period of favorable conditions to significantly reduce exploded mite populations. So if we see a quick return of hot, dry weather you may not see the decline you would have hoped for. A combination of high humidity, dew and cool night temperatures is often needed to favor the development of the naturally occurring fungus that can crash mites in a few days. So bottom line - you will still need to scout for spider mites.

So what if you still need to control mites. As we learned in 2007, drought will seriously stress plant growth, favor mite development and create plant growth conditions that make it difficult to achieve effective control. Early detection and multiple applications are often needed under drought stress conditions. Under high population pressure, a single treatment may not be adequate to kill all the life stages. Mite eggs may not be affected by the initial knockdown and thus hatch after a few days. As indicated in past newsletters, dimethoate, Lorsban (chlorpyrifos) and Hero are labeled on soybeans for spider mite control. The bifenthrin component in Hero is the material that will provide spider mite suppression. However, to be effective it should be applied before mites explode. Please refer to the label for use rates and restrictions - you will need the high rate for spider mite control. It should also be noted that the label states do not make applications less than 30 days apart (<http://www.cdms.net/LDat/ld80Q005.pdf>). We do not have replicated trial experience with Hero. We plan to evaluate it this year in research trials. In two grower experiences that I

am aware of, it appeared to control the populations; however, it also rained within a few days of the applications. In years past, under drought stress conditions, the combination of a timely rainfall before or right after a miticide application has greatly improved control.

When dimethoate was used in past years, growers reported that the addition of a penetrating surfactant helped to improve control, especially in drought stressed fields. Although we have also observed this in grower fields, we do not have any research data on adjuvants and in 2007 the use of adjuvants did not always help improve control with dimethoate in extremely stressed fields. Like any foliar systemic, dimethoate must be absorbed and translocated by the leaf tissues to provide residual action; otherwise, it undergoes rapid photodecomposition from sunlight. This leaf absorption process is greatly reduced in drought-stressed plants that have "shut-down" physiologically. Another important factor that plays a role in the performance of dimethoate is the pH of the water used as the carrier. Many pesticides, especially dimethoate, are subject to breakdown by alkaline hydrolysis (http://www.ag.ndsu.nodak.edu/aginfo/entomology/entupdates/ICG_08/01_Intro_08.pdf). In alkaline water (high pH), there is a break in certain bonds in the dimethoate molecule, causing two or more new molecules to form. This increases the decomposition rate of the insecticide and can result in poorer than expected field performance. Dimethoate degradation is also accelerated by the mineral content of the water, especially the presence of iron. If a high pH situation exists, you can lower the alkalinity of the water in the spray tank by adding an acid-based buffer. An important consideration is to select a buffering product that lowers the pH to the acid range without causing phytotoxicity. Also, the buffer must be added to the spray tank first, before the addition of dimethoate.

In 2007, Lorsban (chlorpyrifos) provided good contact control of motile mites in situations when applied in enough water to get good coverage. However, since Lorsban is not a systemic product, a second spray 3 to 5 days later may be needed to kill newly hatched mites.

The Lorsban label states that: (1) When large numbers of eggs are present, scout the treated area in 3-5 days and if newly hatched nymphs are present, make a follow up application with a non-chlorpyrifos product and (2) do not make a second application within 10 days of the first application. So before applying be sure to read the label (like all products) for restrictions, maximum number of applications, etc. (<http://www.cdms.net/LDat/ld02A000.pdf>).

In speaking with the research and development rep for our area from Dow AgroSciences in 2007 (manufacturer of Lorsban), he suggested that the addition of a petroleum oil may help to improve control with Lorsban. He ran trials with cooperators in 2006 using petroleum oils plus Lorsban on soybeans (such as Damoil and stylett oils) and did not see phytotoxicity. However, I have not had any experience with the use of these oils in soybeans, especially under drought stress conditions. As we know, the Lorsban will only provide control of the motile mites and he suggested from work in other crops that the oil, when applied correctly, should help to smother eggs present and therefore provide a longer period of control.

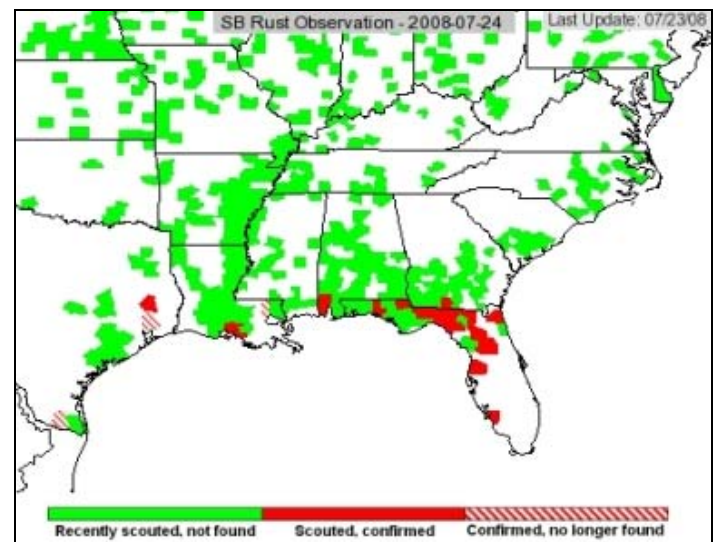
As indicated last week, continue to watch full season beans that are starting to set pods for stink bugs. We continue to see an increase in both brown and green stink bug populations. Economic damage is most likely to occur during the pod development and pod fill stages. You will need to sample for both adults and nymphs when making a treatment decision. Available thresholds are based on beans that are in the pod development and fill stages. We are currently following the same guidelines that are being used in Virginia. Thresholds are also based on numbers of large nymphs and adults, as those are the stages most capable of damaging pods. As a general guideline, current thresholds are set at 1 large nymph/adult (either brown or green stink bug) per row foot if using a beat sheet, or, 2.5 per 15 sweeps in narrow-row beans, or 3.5 per 15 sweeps in wide-row beans.

We have also found our first corn earworms in a few fields in Sussex County. As soon as pods are present, you will want to start watching for this insect as well.

Soybean Rust Update - *Bob Mulrooney*,
Extension Plant Pathologist; bobmul@udel.edu

On July 22, soybean rust was confirmed on soybean leaves collected from sentinel plots in Madison County, Florida. On July 21, rust was confirmed on soybeans in sentinel plots in Jackson and Walton counties in Florida. Most of the counties in Florida adjacent to Georgia and Alabama have reported soybean rust in 2008.

Several of the sentinel plots in DE have reached bloom and sampling has begun for soybean rust here. One hundred leaves are collected, incubated for 48 hours and then microscopically examined for soybean rust as well as other diseases and insect pests that might be present.



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

Commodity Price Drop May Stall

Numerous reasons are given by grain market analysts for the recent sell-off in the corn and soybean markets, among them: the markets were overbought therefore a sell-off was in order; non-commercial speculative traders are exiting commodities to invest in the stock market; growing conditions in the Corn Belt are reported as ideal; the price of crude oil has declined; and 'bull markets must be fed' in order to be sustained. Since the end of June through

the third week of July closing prices for Dec '08 corn futures have dropped nearly \$2.00 per bushel, Nov '08 soybean futures prices have dropped nearly \$2.50 per bushel, Dec '08 SRW wheat prices have dropped nearly \$1.60 per bushel; and Sept '08 crude oil prices have dropped nearly \$23.00 per barrel. Some would suggest that due to the ideal growing conditions in the Corn Belt that commodity traders have bid the weather premium out of current price offerings. It can also be suggested that demand destruction was occurring at the higher price levels resulting in reducing demand for commodities and thereby lowering price offerings. Regardless of the reason(s) that one wants to hang their hat on for why prices have done what they've done, the important consideration regards the question "What are commodity prices likely to do?"

Marketing Strategy

Currently, the trend in commodity prices is down. The downtrend could take a U-turn in the event that 'ideal' weather conditions in the Corn Belt don't hold up. It will take ideal growing conditions in the Corn Belt throughout the rest of the growing season and a late frost in order to garner yields that are in line with the trend line. At some point over bought markets that incur major sell-offs will become oversold and traders will then recognize buying opportunities. One has to wonder whether the index funds are currently taking note of buying opportunities. Due to the recent sell-off in the corn and soybean markets and the lateness in U.S. crop development it is advisable to hold up on making additional new crop sales. Currently, Dec. '08 corn futures are trading at \$5.90 per bushel; Nov '08 soybean futures are trading at \$13.75 per bushel; and Dec '08 SRW wheat futures are trading at \$8.08 per bushel. The weekly export sales report was considered neutral for corn, and bullish for soybeans and wheat. For technical assistance on making grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.

General

Cancellation of Carbofuran (Furadan) -

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

We just received this notice from EPA on Furadan.

"Due to considerable risks associated with the pesticide carbofuran in food and drinking water, EPA is revoking the regulations that allow carbofuran residues in food. Even though carbofuran is used on a small percentage of the U.S. food supply and therefore the likelihood of exposure through food is low, EPA has identified risks that do not meet our rigorous food safety standards. EPA is taking the necessary steps to address these risks to ensure we have the safest food supply possible. The United States has a safe and abundant food supply, and children and others should continue to eat a variety of foods, as recommended by the federal government and nutritional experts.

"In addition, EPA is proceeding on the path toward cancellation of the pesticide registration, which will address the risks to pesticide applicators and birds in treated fields. As part of this effort, EPA is also releasing its response to the peer review conducted by the independent Scientific Advisory Panel and the agency's response to the U.S. Department of Agriculture's comments on the effect of the cancellation of carbofuran on the agricultural economy.

"EPA will accept public comments on the proposed tolerance revocation for 60 days. For additional information, visit:
http://www.epa.gov/pesticides/reregistration/carbofuran/carbofuran_noic.htm."

Announcements

Niche Market Opportunities

Thursday, August 14, 2008 6:00 p.m.
DSU Smyrna Outreach and Research Center
884 Smyrna-Leipsic Rd., Smyrna, DE

Learn about specialty crops to meet the needs of diverse populations in the Mid-Atlantic region.

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>

For Current Agricultural Information from the UD Kent Co. Extension Office Visit www.kentagextension.blogspot.com

Recent Topics:

Rain Last Night - What Effects on Crops?
Pictures from the Delaware State Fair IV
What Yield Losses to Expect in Corn With Heat and Dry Weather
Pictures from the Delaware State Fair III
Corn Markets Continue to Decline Back to Spring Lows
Current Grain Market Information
Pictures from the Delaware State Fair II
Very Late Planted Double Crop Soybeans
Dairy and Beef - Keys to Making Good Silage
Poultry - Understanding LT
Photos From Delaware State Fair I.
Bean Leaf Beetle - A Pest on the Increase
Hot and Dry - Need Rain
Current Grain Market Information
Watermelon Twilight Meeting
Combine and Root Dig Field Day
Organic Field Day on Field Crops at the USDA
Beltsville Agricultural Research Center

UD Watermelon Twilight Meeting

Wednesday, August 13, 2008 6:30 p.m.
Carvel Research and Education Center
16483 County Seat Hwy, Georgetown, DE

Watermelon Disease Control

Kate Everts – See Fusarium wilt control trials and learn about results from recent fungicide trials for gummy stem blight. Discuss Pristine resistance as it relates to the Delmarva.

Watermelon Weed Control

Mark VanGessel – See experiments on general weed control, experimental fumigant for under plastic mulch and recovery and response of watermelons to herbicide drift.

Watermelon Insect Update

Joanne Whalen

2008 Watermelon Variety Trial

Emmalea Ernest - See and sample varieties from the trial.

Meet at the picnic grove near the farm shop to board the wagon and begin the tour at 6:30 p.m. Stay to enjoy dessert and taste some of the varieties from the variety trial afterwards.

Please pre-register on or before August 11, 2008 by contacting Karen Adams at adams@udel.edu or (302) 856-2585 x 540.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of July 17 to July 23, 2008

Readings Taken from Midnight to Midnight

Rainfall:

0.17 inch: July 23

Air Temperature:

Highs ranged from 92°F on July 17, July 18, July 20 and July 22 to 90°F on July 19.

Lows ranged from 75°F on July 20 to 62°F on July 17.

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
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