



# WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 13, Issue 19

July 29, 2005

## Soybean Rust Update

Another county in GA was added this week, making a total of 4 counties with infections on soybeans in GA. Another sentinel plot had several infected leaves. The sample was collected from the sentinel plots at the SunBelt Expo in Colquitt County. Several pustules, each with profuse sporulation, were found on two of the 100 leaves that were collected. The plants are in the R4-R5 growth stage. According to Bob Kemerait, Extension Plant Pathologist, "At the very least, spread of rust seems to be slow in the Coastal Plain of Georgia at this point". That could change but the threat of soybean rust for Delmarva continues to be low at this point. The high temperatures and low humidity down south have not been favorable for rust. Continue to monitor for rust by visiting the national rust website at [www.sbrusa.net](http://www.sbrusa.net). Systematic surveys are being carried out in eastern Mississippi, Alabama, northern Florida, Georgia, and South Carolina to define the geographic boundary of disease development. **The risk of spore movement this far north is very low at the present time.**

The Diagnostic Clinic website address has changed during the update of the Extension website. This Diagnostic Clinic site is the home of our soybean rust information. The new address is <http://ag.udel.edu/extension/pdc/index.htm>.

The toll-free Soybean Rust Hotline number is operational and a current message is available by calling 1-866-234-1347.

As of this writing we still have not received any of the section 18 registrations for beans other than soybean. Quadris (Amistar), Nova for snapbeans, and Headline (all beans except lima beans and other succulent podded beans), are the only products registered for soybean rust at the present time.

*Bob Mulrooney*

## Vegetables

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

### Lima Beans

Continue to scout fields for lygus bugs and stinkbugs. Treatment should be considered if you find 15 adults and/or nymphs per 50 sweeps. Capture, Mustang or Warrior are labeled for both species. The higher labeled rates will be needed if stinkbugs are the predominant insect present. You should also start scouting fields as soon as pin pods are present for corn earworm. A treatment will be needed if you find one corn earworm larvae per 6 ft-of-row.

### Melons

Continue to scout all fields on a weekly basis for aphids, cucumber beetles and spider mites. We

have started to see a significant increase in cucumber beetle populations so be sure to apply treatments before beetles begin feeding on the rinds. In many cases, multiple applications may be needed to prevent damage. Beetles are very mobile and new adults can invade fields every few days at this time of year.

### Peppers

Since corn borer trap catches continue to increase, be sure to maintain a 7-day spray schedule for corn borer control. In areas with high trap catches (> 10 per night), a 5-7 day schedule may be needed. Since trap catches can increase quickly at this time of year, be sure to check local moth catches in your area at <http://www.udel.edu/IPM/traps/latestblt.html>. You will still need to consider a treatment for pepper maggot. Continue to watch for beet armyworm (BAW) larvae as well as their feeding signs. You will also need to use a product like Spintor, Avaunt, or Intrepid which provide BAW control.

### Snap Beans

Thrips populations continue to be high in seedling stage snap beans so be sure to scout carefully for thrips. Sprays are needed at the bud and pin stages on processing beans for corn borer control. Since corn borer trap catches have significantly increased in some areas, be sure to check the Crop Pest Hotline and/or 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://www.udel.edu/IPM/traps/latestblt.html> and <http://www.udel.edu/IPM/thresh/snapbeanecbthresh.html>). Once pins are present on fresh market snap beans, maintain a 7 day schedule for corn borer control.

### Sweet Corn

Fresh market, silking sweet corn should be sprayed on a 3 day schedule. Be sure to check trap catches for the current spray schedule since trap catches quickly change. Trap catches are generally updated on Monday and Thursday nights. <http://www.udel.edu/IPM/traps/latestblt.html>; <http://www.udel.edu/IPM/thresh/silkspraythresh.html>. Continue to watch for fall armyworm feeding in the whorls. We are starting to see an

increase in populations. A treatment is needed if you find 12-15% of the plants infested. In addition, multiple applications are generally needed to provide effective control. Worms must be small at treatment time to achieve effective control.



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

### Cucurbits

With a return of cooler temperatures particularly at night, growers need to be on guard for downy mildew on cucumbers, and other cucurbits, especially pumpkins. The recent hot weather especially the night temperatures were not favorable for downy mildew. Downy mildew has been found on pumpkins in NJ, so growers should be applying a fungicide in their rotation that is effective on downy mildew. In low, wet areas there is always the threat of Phytophthora fruit rot on watermelon as well as cucumbers. Watermelon vines can also be infected while vine infection of cucumber is usually not seen here. On watermelon Acrobat, Gavel or Tanos can be used to prevent infection. Good coverage of the plants and fruit are important.

### Potato/Tomato Late Blight

Late blight was found this past week on tomato in Centre Co., PA and on potato in New York in Steuben Co. In both cases the incidence was low. There have been no new reports of late blight in NJ. We have not detected it in DE so far this year. Delaware potato growers' season is drawing to a close; many early fields have been killed and harvest is beginning. The threat of late blight is remote unless cool, wet weather occurs on late-maturing potatoes.



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

I frequently am asked for a "good" spray program for pumpkins. This is always a difficult program to design because it depends on field

history (i.e. has Phytophthora crown rot occurred in the field?), production practices (no-till vs. bare ground), and the grower's philosophy about control (Cadillac treatment program vs. minimal inputs). Keep the following in mind to design a good spray program:

- Know what diseases are the most common on your farm. Previous problems with black rot, Phytophthora blight, anthracnose, scab or other diseases may indicate that these diseases are likely to be problems again.
- Be up-to-date on the occurrence of powdery mildew and downy mildew on Delmarva. The presence of these diseases in our area indicates that your spray program should include materials that are effective on them.
- Even after implementing a program, scout your fields frequently and modify your program if new disease problems occur.
- Familiarize yourself with the Commercial Vegetable Production Recommendations section on pumpkins. Many fungicides are available for controlling different diseases.

A "typical" spray program is to alternate

- 1) chlorothalonil *plus* Nova 5 oz/A or Procure 8 oz/A with
- 2) Pristine 12.5 oz/A *plus* copper or
- 3) Tanos *plus* maneb or chlorothalonil.

If downy mildew is present on pumpkins, an application of Previcur Flex 1.2 pt/A may be applied in rotation with chlorothalonil *plus* Nova or Procure. If conditions favor Phytophthora blight, apply Acrobat 6.4 oz/A *plus* copper.

A good fungicide spray program will increase yields and improve quality. The single best way to improve handle quality is to control foliar and fruit diseases in season.



## Agronomic Crops

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

### **New Reduced Orthene 90S Rate for Soybean Aphid**

Valent just released this news: a 2(ee) label that reduces the rate range of Orthene 90S for soybean aphid control in soybeans from 0.83 to 1.1 to 0.56 to 1.1 lb ai/A. This change takes effect immediately. Please see the label for additional use instructions.

### **Acramite 4SC Section 18 for Spider Mites on Soybeans in Delaware**

EPA has recently approved our submission for the use of Acramite 4SC for spider mite control on soybeans. NOTE - This is a different formulation than what is labeled on cucurbits and fruiting vegetables. The manufacturer is currently working on making a few revisions to the Sect 18 label required by EPA but it should be available by the end of this week. A copy of the Section 18 label must be in the hands of the soybean producer and applicator at the time of application. Dealers should receive copies of the label from the manufacturer Chemtura (formally Crompton) when product is shipped; however, a copy of the label can also be gotten from Grier Stayton at the Delaware Department of Agriculture.

Before applying any material for mite control, here are a few points you will need to remember:

- Early treatment is needed to achieve control. Once significant yellowing occurs fields are generally well above threshold. Then it is extremely difficult to achieve control and one application may not provide adequate control. Note - The Section 18 for Acramite only allows one application.
- Therefore, all the new and labeled products we are testing for spider mite control, including the Acramite, will provide the best control when applied as

soon as threshold levels are present. Complete control generally has not been achieved with one application if populations are exploded or excessive populations established at treatment time. Some products have longer residual, but if you wait until high numbers are present and numerous eggs are present, you may still need multiple applications - even with the newer products. If populations are declining, you may get away with one application, but that is all dependent on weather conditions.

In addition to the use rates, days to harvest and rotational restrictions, here are a few key use items that you will need to know before applying Acramite:

- As with other products, treatments should begin if you find 20-30 mites per leaflet or 10% of plants with 1/3 or more leaf area showing light stippling. See comments from the label on rates to use based on infestation level at treatment time. Just as a reminder, this means that you should just be seeing light stippling at the base of leaflets - if leaves are yellowing and you can see damage from your truck window, then populations have generally exploded and are well above the threshold.
- Comments from the Chemtura Development Rep: "I would recommend against mixing Acramite with any sticker or products containing stickers. LI700 has been used extensively with Acramite on apples and ornamentals (Floramite) and the company has not experienced any problems. In fact, LI700 lowers the pH of the spray-mix, which is a good thing for Acramite. We have also had good success using silicone based wetting agents, such as Silwet and Kinetic. Stickers seem to be the only potential problem at this time."
- Chemtura has also developed a list of Best Use Recommendations (BURs) for Acramite on cucurbits and fruiting vegetables which they have indicated should also apply to Acramite 4SC on soybeans. The BURs states: "Maintain a tank-mix at or below pH 7.0. Chemtura

field reps have indicated that they have seen that a pH of 6.5 or lower is better. However, remember these best use recommendations are just recommendations for best results within the parameters of the label."

The following are the use rates and a few restrictions. However, you need to read the entire label for any additional restrictions:

- Only one application is allowed per year of Acramite 4SC at a rate of 12-16 oz/Acre. The label states that for maximum residual control, applications should be made as soon as mites appear. Use the low rate where mite infestations are light. The higher rates may be required for heavy infestations or for extended residual control.
- A 21-day PHI must be observed.
- A 30-day rotational crop restriction for all crops on which Acramite is not currently registered.
- Can be applied by ground or air.



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

**Phytophthora root and stem rot** was identified this week from several low spots in fields. Small areas of dying plants with a very visible canker progressing from the soil line up to the first branches were seen. The leading edge of the canker (sunken area) is often dark brown almost black. This is the same fungus that causes so much stand reduction in the mid-west (Ohio, Illinois, Indiana, and Missouri to name a few). Here we occasionally see these dead spots in low areas in seasons when we have hot, wet conditions.



Phytophthora rot

Soybean cyst nematode is raising its ugly head once again. Stunted patches of beans can be seen and when the plants are carefully dug the roots have the diagnostic yellow to white females protruding from the roots which are smaller than the nitrogen fixing nodules. Plant resistant soybeans and/or rotate with non-host crops such as corn, lima beans, and other vegetables. Snapbeans can also be a host.



Soybean cyst nematode females on a root. Note the nitrogen fixing nodule at the intersection of the two roots in the middle of the picture for size comparison. If the roots are dug from the soil rather than pulling them out, you will increase your chances of seeing them.

### Comparison of Glyphosate Herbicides in Nebraska - Mark VanGessel, Extension Weed Specialist; [mjv@udel.edu](mailto:mjv@udel.edu)

We have tested a variety of glyphosate formulations the past few years and have found minor differences (if any) between the formulations. Other research has shown the same results. The following is from a research report from the online Journal of Crop Management (July 2005). The authors are B. F. Kappler, S. Z. Knezevic, R. F. Klein, D. J. Lyon, A. R. Martin, F. W. Roeth, and G. A. Wicks. The summary: "the proliferation of glyphosate products into the glyphosate-resistant crop market is unprecedented. Due to widespread public interest in these products, field experiments were conducted to compare the efficacy of various glyphosate herbicides on weed control at six locations across Nebraska in various cropping systems. In general, generic glyphosate products provided equal level of weed control compared to the usually more expensive brand name products". The products tested included Clearout 41 Plus, Cornerstone, GlyphoMax, GlyphoMax Plus, Glyfos, Roundup UltraMax, Roundup WeatherMax, and Touchdown IQ.



### Time of Day of Application Effect on Glyphosate and Glufosinate Efficacy - Mark VanGessel, Extension Weed Specialist; [mjv@udel.edu](mailto:mjv@udel.edu)

The following is a research summary published in the online Journal of Crop Management (July 2005). The authors are K. B. Martinson, B. R. Durgan, J. L. Gunsolus, and R. B. Sothern. The summary reads: "the objectives of this study were to examine the influence of time of day of herbicide application, adjuvant, and rate of glyphosate and glufosinate (active ingredient in Liberty) on annual weed control. Time of herbicide application influenced annual weed control of both glyphosate and Liberty. Greatest annual weed control was observed between 0900 and 1800 h, while less weed control was observed at 0600, 2100, and 2400 h. Additional adjuvant or an increased rate of glyphosate or Liberty improved efficacy, but did not overcome



the time-of-day effect". The additional additive was a mixture of an 80:20 nonionic surfactant and ammonium sulfate.

The study was conducted in Minnesota which has longer summer day-length than DE, so the exact time of day may not match exactly. But the conclusion is pertinent to our situations; it reads "applicators should try to avoid early morning and evening hour applications of glyphosate and Liberty, especially under cooler environments and on difficult-to-control or taller weed species." The study tried to determine which factors (herbicide rate, air temperature, weed height, additional adjuvant, relative humidity, or presence of dew) contributed most to the decline in control and found it difficult to conclude which, if any, one factor is most important.



### Herbicide-Resistant Weeds on the Eastern Shore - Mark VanGessel, *Extension Weed Specialist*; [mjv@udel.edu](mailto:mjv@udel.edu)

Over the past few years many have focused on glyphosate-resistant horseweed (marestalk), which has continued to spread, and reports of other weed species resistant to glyphosate in the mid-western States. In the meantime, resistance to other herbicides continues to show up in our region.

I was asked about control of pigweed in lima beans since a preemergence application of Pursuit and postemergence application of Sandea was not effective. Both Pursuit and Sandea are ALS-inhibiting herbicides and ALS-resistant pigweed has been documented by UD and Virginia Tech on the eastern shore.

Furthermore, we tested a population of common ragweed from DE and found it resistant to both ALS-inhibiting herbicides AND PPO-inhibiting herbicides. The ALS-inhibiting herbicides we tested include Permit (or Sandea), Beacon, FirstRate (or Amplify), Pursuit, Classic, Scepter, Raptor and others. The PPO-inhibiting herbicides tested were Reflex, Cobra, Resource, Valor SX, Aim, Goal 2XL, Authority, and Ultra Blazer. The level of resistance was much

greater with ALS-inhibiting herbicides than with the PPO-inhibiting herbicides, but there was great enough resistance that adequate control was not achieved.

So if an herbicide that normally controls a particular species does not perform up to expectations, and good application procedures were followed, and all other species are controlled, resistance maybe a culprit. This further illustrates the need to rotate herbicide mode-of-action as much as possible. The following website has herbicide mode-of-action listed: [http://www.rec.udel.edu/weed\\_sci/DE-NJ%20Corn%20Guide\\_05Web/Corn\\_05\\_Linked%20files/Corn\\_Table%2020\\_05.pdf](http://www.rec.udel.edu/weed_sci/DE-NJ%20Corn%20Guide_05Web/Corn_05_Linked%20files/Corn_Table%2020_05.pdf)



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

#### **Weather Likely to Take Commodity Prices Higher**

New crop corn and soybean prices are likely to increase throughout the remainder of this week and into next week due to the impact that the weather is having on '05 U.S. production potential. Therefore, it will be extremely important over the course of the next two weeks to stay abreast of nearby price movement that may well result in excellent opportunities for either finishing up on '05 pre-harvest forward pricing and/or taking price risk protection. Of course the pricing mechanism that one chooses to use will depend in large part upon local basis bids, pre-report trade estimates on the size of '05 crop production potential, and the extent/duration of the price rally that is likely to occur. The August 12th USDA Crop Report should give us a handle on the expected size of the '05 U.S. corn crop as well as a glimpse of insight into the size of the '05 U.S. soybean crop. The short run outlook is for commodity prices to remain extremely volatile. For technical assistance on making grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.



**Late Blight Advisory (18 DSV's Exceeded)**

Disease Severity Value (DSV) Accumulation as of July 26, 2005 is as follows:

Location: Joe Jackewicz Farm, Magnolia, DE. Greenrow: May 4, 2005

Date	Daily DSV	Total DSV	Spray Recommendation
6/28-6/29	3	51	7-day
6/29-6/30	3	54	7-day
6/30-7/1	2	56	7-day
7/1-7/2	2	58	7-day
7/2-7/4	0	58	7-day
7/5-7/5	2	60	7-day
7/5-7/6	3	63	7-day
7/6- 7/9	17	80	5- day
7/12- 7/13	2	82	10- day
7/13-7/14	3	85	7-day
7/14- 7/15	5	90	7-day
7/15- 7/16	5	95	7-day
7/16- 7/17	2	97	7- day
7/17- 7/18	1	98	7- day
7/18- 7/20	0	98	7-day
7/20- 7/25	0	98	10-day
7/25- 7/26	1	99	10-day
7/26- 7/27	1	100	10-day

P-day value is now 611, which is used to predict early blight and the need for protective fungicides. Early blight sprays are recommended.

Maintain fungicide sprays for early blight. No late blight has reappeared in potatoes or tomatoes locally. The latest reports are on tomato in Centre County, PA and on potato in Steuben County, NY. Both finds are not extensive and treatments were applied.

## Announcements

### **Agronomic Crops Twilight Session**

Wednesday, August 3, 2005 6:00 p.m.

UD Cooperative Extension Research and  
Demonstration Area

(3/4-mile east of Armstrong Corner, on Marl Pit Rd.  
(Rd 429), Middletown

Bring a tailgate or lawn chair and join your fellow producers and the UD Extension team for a discussion of this summer's **demonstration trials** and **in-season production issues** in small grains, corn, and soybeans, to include an **Asian Soybean Rust** update, the **03-04 wheat and barley variety trial results**, and a look at this year's **soybean variety trials**.

### **We will apply for DE Pesticide and DE Nutrient Management re-certification credit.**

This meeting is free and everyone interested in attending is welcome. **To register, for more information, or special consideration in accessing this meeting, please call our office in advance, at (302) 831-2667.**

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### **Pesticide Safety Training and Testing for Pesticide Applicators Certification**

September 21 & 22, 2005

Delaware Dept. of Agriculture Conference Center  
Dover, DE

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**Sussex Conservation District's 2005  
Cost-Share Sign-Up**

August 1<sup>st</sup> through 5<sup>th</sup>, 2005  
and

August 8<sup>th</sup> through 12<sup>th</sup>, 2005  
8:00 a.m. – 4:30 p.m.

Applications will be accepted for the following practices:

**Cover Crops**  
**Manure Structures**  
**Composters**  
**Ag Waste Facilities**  
**Heavy Use Area Protections**  
**Rentar Fuel Catalysts**  
**Other Best Management Practices**

Anyone applying for a Rentar fuel catalyst must provide the horsepower of the generator.

All applications received will be ranked based on need, and statewide nutrient management requirements. All applications received during the sign-up will be serviced based on their ranking and available funding.

For more information about the cost-share sign-up, call (302) 856-3990 ext 3.

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## Weather Summary

<http://www.rec.udel.edu/TopLevel/Weather.htm>

Week of July 21 to July 27, 2005

Readings Taken from Midnight to Midnight

**Rainfall:**

0.36 inches: July 25

0.08 inches: July 26

0.68 inches: July 27

**Air Temperature:**

Highs Ranged from 97°F on July 27 to 87°F on July 23.

Lows Ranged from 74°F on July 26 to 62°F on July 24.

**Soil Temperature:**

89°F average.

(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>

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