Soybean Rust Update

Soybean rust continues to develop very slowly in the South. Soybean rust has been found in three soybean sentinel plots in Gadsden County in north central Florida. These sites were located within three miles of an infected kudzu site. On July 24th Georgia officials reported a soybean rust find on soybeans in Brooks County. The two previous finds in this county have been on kudzu. Currently rust has only been found on this year’s soybeans in five different counties in three states (AL, FL, GA), the rest of the finds have been on kudzu. Continue to check the national PIPE website for more information at www.sbrusa.net

Locally the MG IIIs in the sentinel plots are in R4-R5 now and the MG V is in R1-R2. Weekly sampling continues and Septoria brown spot continues to be the most common disease seen.

Bob Mulrooney

Vegetables

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

**Cabbage**
As soon as plants are set in the field, be sure to sample for cabbage looper and diamondback larvae. Treatment will be needed before larvae move into the hearts of the plants. If both species are present, Avaunt, a Bt, Proclaim or Spintor have provided control in the past. If cabbage looper is the predominant species, a pyrethroid, Intrepid, or Confirm will also provide control. We also received a label for Rimon 0.83EC this spring on head and stem brassica - which includes cabbage. Please refer to the label for rates, days to harvest from last application and other restrictions.

(http://www.cdms.net/ldat/ld6LD011.pdf)

**Cucumbers**
Be sure to watch for an increase in aphid populations since populations can explode quickly. Sprays should be applied before significant leaf curling occurs. Once populations explode, control is often difficult and multiple treatments are often necessary.

**Lima Beans**
Continue to scout fields for lygus and stinkbugs. The higher labeled rates of insecticides will be needed if stinkbugs are the predominant insect present. As earworm trap catches start to increase, be sure to scout fields for earworms as soon as pin pods are present. 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. All three insects can still be found in fields. As harvest continues, be sure to watch for
cucumber beetles and beet armyworm larvae feeding on rinds.

**Peppers**

In areas where corn borers are being caught in local traps and pepper fruit is ¼ inch or more in diameter, fields should be sprayed on a 7-day schedule for corn borer control. As soon as corn borer trap catches increase to above 10 per night, a 5 to 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://ag.udel.edu/extension/IPM/traps/latestblt.html](http://ag.udel.edu/extension/IPM/traps/latestblt.html). You will also need to consider a treatment for pepper maggot. In addition to beet armyworm feeding on leaves, continue to watch for an increase in aphid populations.

**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. Just as a reminder, Orthene has not provided effective corn earworm control on processing snap beans. Since corn borer and corn earworm trap catches have started to increase, 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](http://ag.udel.edu/extension/IPM/traps/latestblt.html) and [http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html](http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html)). Once pins are present on fresh market snap beans, a 7-day schedule should be considered for corn borer and corn earworm control.

**Sweet Corn**

In most cases, fresh market, silking sweet corn should be sprayed on a 3-day schedule, except in the Laurel area where sprays are needed on a 2 to 3-day schedule and in the Seaford area where sprays are needed on a 2-day schedule. However, be sure to check trap catches for the current spray schedule since trap catches quickly change. Trap catches are generally updated on Tuesday and Friday mornings.

(available at [http://ag.udel.edu/extension/IPM/traps/latestblt.html](http://ag.udel.edu/extension/IPM/traps/latestblt.html) and [http://ag.udel.edu/extension/IPM/thresh/silkspraythresh.html](http://ag.udel.edu/extension/IPM/thresh/silkspraythresh.html)). You can also call the Crop Pest Hotline for current trap catches (in state: (800) 345-7544; out of state: (302) 831-8851). Continue to watch for fall armyworm feeding in whorl stage corn. We are seeing an increase in the number of fields with damage and the percent infested plants. A treatment is needed if you find 12-15% of the plants infested. Multiple whorl applications are generally needed for fall armyworm control. In addition, you may need to combine a fall armyworm material with a pyrethroid for the first 2-3 silk sprays if fall armyworm pressure was heavy in whorls.

**Agronomic Crops**

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

**Alfalfa**

Be sure to sample fields on a weekly basis for leafhopper adults and nymphs. Economic levels can be found in fields throughout the state. Remember, once plants are yellow damage has already occurred. A treatment is needed if you find 20 per 100 sweeps in alfalfa 3 inches or less in height; 50 per 100 sweeps in 4-6 inch tall alfalfa; 100 per 100 sweeps in 7-11 inch tall alfalfa and 150 per 100 sweeps in alfalfa 12 inches or taller in height.

**Soybeans**

Economic levels of grasshoppers can still be found, especially in double cropped soybeans. The pre-bloom threshold is 30% defoliation and once fields reach the bloom to pod-fill stage the threshold drops to 15% defoliation. Multiple applications are often needed to achieve grasshopper control. You should also continue to sample fields for spider mites and soybean aphids.

As fields enter the pod forming stage, you will also want to sample for stinkbugs. Each year I receive questions about stinkbugs in soybeans. Although we have not seen significant damage throughout the state, we did have reports of losses in some fields in 2005. Available
thresholds are based on beans that are in the pod development and fill stages. Ames Herbert from VA has started to conduct research to look at this insect in soybeans. The following is information from Ames in his last Virginia AG Pest Advisory:

“Both green and brown stink bugs are occurring in some soybean fields. My graduate student, Kathy Kamminga, is surveying about 21 soybean fields in 16 southeastern, Middle Peninsula and Northern Neck counties. She has completed the first round of samples this week. Seventeen of the 21 fields had stink bugs, but numbers are still low. The highest sweep net count was about 0.25 per row foot (one-fourth the threshold) and 1.6 per 15 sweeps about one-half the threshold). Stink bugs are moving into fields from other hosts like corn, trees (a huge number of green stink bugs were found in basswood trees on the Eastern Shore) or woody shrubs so often there is an edge effect, that is, more on field edges. We learned last year that in some fields they never leave the edges but in some cases, they will eventually move out to populate whole fields. Thresholds are based on beans that are in the pod development and fill stages. Soybeans that are still in vegetative or flowering stages are not susceptible to economic damage and should not be treated. If pods are formed and filling, react if thresholds are met. Thresholds are old but consistent with most other states in the eastern US. Our thresholds are also based on numbers of large nymphs and adults, as those are the stages most capable of damaging pods. 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.”

For more information please use the following link http://www.sripmc.org/Virginia/.

How Vigorous is Your Soybean Root System? - Richard Taylor, Extension Agronomist; rtaylor@udel.edu

After the recent rains in Sussex County, I was pulling soybean plants and noticed how vigorous the root system was, even where there was obviously a bit of a compaction layer about 6 inches deep. I took some photographs of the root systems thinking that it might be a good practice for everyone to check their crop’s root system as it enters the R1 (Beginning Bloom) and R2 (Full Bloom) stage of growth (Photos 1 and 2).

Photo 1. Note the vigorous tap root, many lateral secondary roots and significant number of large nodules on both the tap root and lateral roots.

Right now in areas that received a few inches of rain last weekend, pulling up the root system rather than digging it up may be the fastest and easiest way to evaluate the health of your soybean crop. What should you look for in a vigorous root system? First, the tap root should be strong, thick, and rather long with a number of large secondary roots. Photo 1 shows the effect of the compaction in the sandy soil at the University of Delaware Research and Education Center near Georgetown. Note how the tap root is thickened nearer the surface and then becomes thinner with a proliferation of secondary roots at the point in the soil profile where compaction begins. In Photo 2 of a plant from a Matapeake silt loam soil, the tap root is of a more uniform thickness the entire length (about 14 inches before the root broke off as it was pulled from the soil). Most of the secondary roots were sheared away when the plant was pulled up but as is evident in Photo 2 there are many secondary roots right down the length of the tap root.
Along the tap root, you should be able to find large numerous nodules that when cut open show a red or pink interior (Photos 3 and 4). The color develops from a reaction of oxygen with the compound leghemoglobin found in nodules that helps maintain reducing conditions (low oxygen levels) inside the nodule so the Bradyrhizobia can function. Non-functioning nodules can have white, green, or even black interiors as the nodule decays.

Photo 2. Tap root of soybean plant pulled from Matapeake silt loam soil (many secondary roots were torn off but note the long tap root and the mass of nodules on the upper end of the tap root).

Photo 3. Tap root of soybean plant pulled from Matapeake silt loam soil (many secondary roots were torn off but note the mass of nodules on the upper end of the tap root).

Photo 4. Note pink to red coloration of soybean rhizobia nodule that has been cut open.

The sandy soils in Sussex County help to make evaluating root systems rather easy following rain events since the soil can be easily knocked off the root systems. While examining the roots, do a quick check for soybean cyst nematodes (SCN) although you may need to have a hand lens with you if your eyesight is impaired as mine is. The SCN female at certain stages forms a white to yellow cyst about the size of a grain of sand that protrudes out of the root epidermis (Photo 5).

Photo 5. Soybean cyst nematode females are the small white to yellow bodies visible on the soybean roots. The larger darkish body on the right center of the photo is a nodule on a branch root.

Not seeing the cysts does not necessarily mean that you don’t have a problem with them since the timing of the observation needs to be just
right to ensure that they are in the right stage for you to identify them. The ideal time to check is about 30 to 40 days after planting and maybe several times during that period to be sure you catch them when the females are forming cysts.

Understanding Soybean Growth Stages: VIII. R5 and R6 - Beginning Seed and Full Seed - Richard Taylor, Extension Agronomist; rtaylor@udel.edu

The R5 or Beginning Seed stage occurs when on 50% or more of the plants in a field you can find a seed 1/8 of an inch long (just slightly greater than 3 mm) in a pod at one of the four uppermost nodes on the main stem with a fully developed leaf (Photo 1). This occurs in pods earlier than we often think (Photo 2) as pods may be only an inch long. The tendency for most of us is to wait to call a plant in the R5 stage when we can either easily see the seed developing in the pod or can easily feel the seed in the pod. Usually by this point, the seed has grown to about a ¼ inch in length.

The R6 or Full Seed stage begins when a pod that contains a green seed, which fills the pod cavity, occurs at one of the four uppermost nodes on the main stem with a fully developed leaf (Photo 3). Again, one-half of the plants in the field must be at this stage. It often seems that this stage last longer than the other reproductive stages. Towards the end of R6, soybean leaves begin to show a bright yellow color and begin to drop off the plant as senescence of the crop begins (Photo 4).
Photo 4. Soybean leaf drop begins toward the end of growth stage R6 and often shows up as an intense yellowing of the field.

Small Grain Results Available - Bob Uniatowski, Associate Scientist; bobuni@udel.edu

Preliminary results for the 2006 Delaware Small Grain Variety Trials are available online at http://www.udel.edu/varietytrials/small_grains/index.html.

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

CBOT to Launch Side-By-Side Agricultural Futures Trading
Beginning August 1, the Chicago Board of Trade will expand its electronic trading session for Agricultural futures to include daytime trading hours. The introduction of side-by-side trading allows customers to choose how they access the CBOT benchmark Agricultural futures contracts - orders can be entered on the e-cbot electronic platform or in the open Auction market. The CBOT, its members, and member firms intend to create a single pool of liquidity and provide more trading opportunities for the entire market. Given below is an overview of the steps taken by the CBOT to prepare for the launch of side-by-side trading.

CBOT Side-By-Side Trading Begins August 1, 2006
- Hours for e-cbot for Agricultural futures will be 6:30 p.m. to 6 a.m. and 9:30 a.m. to 1:15 p.m. (Central Time). Open auction hours remain unchanged, 9:30 a.m. to 1:15 p.m.
- Ticker symbols for the electronic daytime session are the same as the current e-cbot night session.
- The settlement price for both the electronic and open auction platforms will be established in the open auction market.
- Any resting orders from the e-cbot overnight session remain in the order book, unless canceled, when the e-cbot daytime session begins at 9:30 a.m.
- Customers may choose to designate whether an order is to be executed in the open auction market or in the e-cbot electronic market. In the absence of a specific designation by the customer, the customer's agent (broker) may choose to enter the order in either platform.

Weekly Export Sales Report
Pre-report estimates had weekly corn export sales at 650,000 to 850,000 metric tons (25.6 million bushels to 33.5 mb). The weekly report placed U.S. corn exports at 975,900 metric tons (38.4 mb). This is well above the 27,600 mt (1.1 mb) needed this week to stay on pace with USDA's revised projection of 2.1 billion bushels and will be viewed as bullish.

Pre-report estimates for soybeans ranged between 200,000 mt and 400,000 mt (11 mb and 14.7 mb). The weekly report placed sales of U.S. soybeans at 198,700 mt (7.3 mb) and is called neutral to bullish.

Pre-report estimates for wheat ranged between 300,000 mt and 400,000 mt (11 mb and 14.7 mb). The weekly report for U.S. wheat placed sales at 464,700 mt (17.1 mb), above the 14.9 mb needed this week to stay on pace with USDA's 900 mb projection and is termed bullish.

Marketing Strategy
The weather market for U.S. corn has turned the corner, meaning that the U.S. corn crop is
considered to be pollinated and is now expected to be well on its way to producing a yield at trend (149 bushels per acre) or better. Although dry conditions have battered parts of the Western and Northern Corn Belt, production in the heart of the belt is expected to be normal or better (Illinois, Iowa, and Indiana). The critical growing period for U.S. soybeans is expected to arrive in August. Temperatures are expected to be in the mid to high 90's throughout the Corn Belt this weekend. Grain marketers will need to decide upon finishing up any necessary corn and soybean pre-harvest sales in the near term (the next one to two week period). The next USDA Supply and Demand report for U.S. corn and soybeans will be released on Friday, August 11th.

The Weekly Crop Update is available online at http://www.rec.udel.edu/TopLevel/Publicat.htm

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

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Potato Disease Advisory #23 - July 26, 2006, Bob Mulrooney, Extension Plant Pathologist

Late Blight Advisory

Disease Severity Value (DSV) Accumulation as of July 25, 2006 is as follows:
Location: Byfield Farms field east of Magnolia, DE. Greenrow: April 23, flower buds present May 24.

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- Continue to make fungicide applications for late blight and early blight control for later potatoes.
- Fungicide rates should be at the high end of the rate range at this time of the season.

Early blight is the disease of concern now; if you have potatoes with foliage, keep up your fungicide sprays at this time. There have been no new reports of late blight on potato or tomato in the region.