Soybean Rust Update

The most recent soybean rust detection on soybean was in the sentinel plot in Marion County, FL on Thursday, August 10. Florida is getting more afternoon rain showers, which may increase infection in the surrounding area. Soybean rust was also detected on Aug 7 on soybeans in Tift County in south central Georgia. This is the first report of rust in this county in 2006. Currently rust has been found on this year’s soybeans in nine different counties in five states (AL, FL, GA, LA, MS), the rest of the finds have been on kudzu. A total of 29 counties have reported rust this year and include five in Alabama, 13 in Florida, six in Georgia, three in Louisiana, one in Texas, and one in Mississippi. Spore trapping continues throughout the U.S. using both active and passive traps. Dry to very dry conditions have prevailed in the spore source regions and movement to new areas has been slow.

Locally, sentinel plots continue to be scouted and the most common disease continues to be Septoria brown spot. Downy mildew is increasing statewide on susceptible varieties, but below any economic damage. The group III soybeans are at R5 and the group V variety is at R3.

Bob Mulrooney

Vegetables

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

Cabbage
We can now find economic levels of diamondback and cabbage looper larvae. Be sure to apply treatments before larvae move deep into the hearts of plants.

Lima Beans
Continue to scout all fields for lygus bugs, stinkbugs and corn earworm, especially once pin pods are present. All three can be found in fields at this time. The higher labeled rates of insecticides will be needed for stinkbug control. For corn earworm, higher rates will also be needed if population levels are high and worms are large at the time of treatment. As you approach harvest, be sure to check all labels for days from last application to harvest as well as other restrictions.

Melons
We continue to receive reports of rind feeding in melon fields. This damage can be caused by a number of insects including beet armyworm and cucumber beetles so it is important to detect which is causing damage before making a treatment decision. In addition, old damage is present in some fields and as the melons grow the damage appears more significant.
Peppers
In areas where corn borers are being caught in local traps, 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. We continue to find beet armyworms (BAW) so be sure to watch for feeding signs and apply treatments before significant webbing occurs. Materials labeled for beet armyworm control in peppers include Avaunt, Intrepid, Proclaim and Spintor. Be sure to also sample fields for an increase in aphid populations.

Snap Beans
As corn borer and corn earworm populations continue 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 will 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 and 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
With the increase in corn earworm trap catches, silk sprays are needed on a 2 to 3-day schedule in many locations. In the Bridgeville, Harrington, Killens Pond, Milford, Laurel and Seaford areas a 2-day silk spray schedule is needed. 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.

Downy Mildew on Lima Beans
Last week I mentioned several 24 c labels that are currently in place for downy mildew and gave a link for Ridomil Gold/Copper. The other label for Phostrol is included this week (http://www.rec.udel.edu/Update06/Phostrol24c.pdf). With the warm days and cooler nights that are forecast look for heavy dews that could be favorable for downy mildew if rain falls as well during the period. The risk of downy mildew increases as we get into mid-August with the change in weather patterns.

Pumpkin Disease Control - Kate Everts; Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.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.
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.

The following spray program will control powdery mildew, which is now widespread on pumpkins, and protect vines and fruit from gummy stem blight, scab and Plectosporium blight. Alternate 1) chlorothalonil plus Nova 5 oz/A or Procure 8 oz/A with 2) Pristine 12.5 oz/A plus chlorothalonil. If only powdery mildew is a concern, alternate the 1st treatment with 3) micronized wettable sulfur at 4 lbs/A. Sulfur may injure plants, especially at high temperatures -- consult the label for precautions. Downy mildew has not been observed on pumpkins yet this year. If downy mildew moves into the area on pumpkin, additional fungicides with efficacy on downy mildew should be added into the program. If conditions favor Phytophthora blight, apply Forum, Ranman or Tanos.

Cucurbit Powdery Mildew - Kate Everts; Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.edu

Powdery mildew is widespread on susceptible cucurbits, such as fresh market cucumbers, some muskmelon (cantaloupe) cultivars and squash. Apply chlorothalonil plus Nova (5 oz 40 WP/A) or Procure (8 oz 50 WS/A) and alternate with chlorothalonil plus Pristine 12.5 oz/A. This program relies in part on protectants as well as systemic products. Therefore, coverage is very important. Also apply fungicides at the labeled rate (don’t cut the rate). Keep on a good spray schedule (a 7-day interval for powdery mildew). Know which products are at risk for resistance development and alternate products that have different modes of action. A list of registered products and fungicide classes, including their risk level for resistance development is in the Delaware Extension Bulletin 137 and the Maryland Extension Bulletin 236 on page E28.

Finally, continue to scout for other diseases. Remember this program is for powdery mildew, the presence of other diseases such as downy mildew will require changes in the spray program.

Agronomic Crops

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

Alfalfa
Continue to sample fields on a weekly basis for leafhopper adults and nymphs. 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
As we enter August and the potential for insect control increases, be sure to check all labels for the days from last application to harvest as well as other restrictions.

Continue to scout full season and double crop soybeans for defoliators including grasshoppers, bean leaf beetles and green cloverworm. We have received reports from consultants that they are still finding economic levels of defoliation in full season fields. The prebloom threshold is 30% defoliation and once fields reach the bloom to pod-fill stage the threshold drops to 15% defoliation.

You should also continue sampling fields for soybean aphids. This past week, population levels still remained low; however, remember that this aphid is favored by cooler temperatures. Since low levels have been present in the state since late June, the recent cooler weather could trigger an increase in populations. The action threshold - developed in the Midwest - is an average of 250 aphids per plant, on plants sampled throughout the field. In the Midwest, spraying at or beyond R6 has not been documented to increase yield.
Be sure to continue to sample all fields that are in the pod development and pod fill stages for stinkbugs. Populations of stinkbugs are higher in some areas of the state (especially southwestern Kent County) and economic damage is most likely to occur during this stage. You will need to sample for both adults and nymphs when making a treatment decision. Stinkbugs damage soybeans by their feeding when they pierce the pod and seed to feed on plant juices, simultaneously injecting digestive enzymes. Feeding by stinkbugs can cause shriveling and abortion of young pods, and shriveled discolored seed on older pods. The extreme heat last week also resulted in aborted pods. Stink bug feeding can also result in maturity delay. Pod damage during pod set to pod fill can slow maturity and result in green fields or areas of fields at harvest. As indicated in the last 2 newsletters, 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: 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.

You should also begin sampling for corn earworm. Consultants are finding low levels in double crop fields in Sussex County. In most cases, full season fields should escape damage; however, it will be important to check those fields at least 1-2 times to be sure that you do not miss an infestation. With the recent increase in corn earworm trap catches, open canopy blooming fields will be attractive to egg laying moths. A treatment should be considered if you find 3 per 25 sweeps in narrow fields and 5 per 25 sweeps in wide row fields (20 inches or greater).

### Understanding Soybean Growth Stages: IX. R7 and R8 - Beginning Maturity and Full Maturity - Richard Taylor, Extension Agronomist; rtaylor@udel.edu

The R7 or Beginning Maturity stage is illustrated in Photo 1, but note that these beans had been sprayed with the fungicide, Headline, at the R3 stage and has resulted in delayed leaf drop. When fungicides have not been used, the soybeans at this stage often have dropped most, if not all, of their leaves. Limited yield increases will occur once this stage is reached since an increasing number of seed from this point on will have reached their full size and weight. On irrigated beans when soil moisture is adequate, irrigation should cease between the middle of R6 and R7 to allow the soil to begin to dry out for harvest. Stop irrigation at the earlier stage if there is enough moisture in the top and subsoil to carry the beans to maturity. With the price of diesel nearly double that of last year and the low price for soybeans, the earliest possible date for cutting off irrigation could be a more profitable choice this year rather than aiming to capture the maximum possible yield potential from the beans. Aerially seeded cover crops usually are flown on either in late R6 (Full Seed) stage or, where Strobiliurin fungicides have been used and leaf drop is unusually delayed, at this (R7) stage when about 20% of the leaves have dropped off the plants.

Photo 1. Soybean plants in the R7 or Beginning Maturity stage at which time at least one normal pod that has reached its mature pod color can be found on the main stem of 50% of the plants in the field.

Full maturity occurs when 95% of the pods have reached their mature pod color (Photo 2). At full maturity, there is no longer an increase in yield due to seed fill since the abscission layer has formed cutting the beans off from the rest of
the plant. From this point on, the process is essentially a matter of the seeds losing enough moisture to reach the point when they can be safely harvested, dried, or stored.

R. Taylor

Photo 2. Soybean plants in the R8 or Full Maturity stage at which time 95% of the pods have reached their maturity pod color.

Managing Irrigation on Corn and Beans - Richard Taylor, Extension Agronomist; rtaylor@udel.edu

A check of many fields indicates that corn maturity is advancing rapidly and that it may be time to think about stopping irrigation in your earliest fields. For field corn that has reached the full dent stage, the extra yield increase from this stage to black layer—when the crop has reached physiological maturity and seals the grain off from the rest of the plant so it can begin the drying down process—is minimal compared with the cost involved in pumping more water on the crop. In some fields I checked that were at full dent, the kernels at the shank end of the ear were showing black layer development indicating that there would be little yield increase in the ear before the entire plant reached maturity. If your corn fields are at the full dent stage and the soil has adequate moisture in the top and subsoil, consider stopping irrigation at this point. There generally will be enough moisture left in the soil to carry it on to maturity and this will not only allow the soil to dry out for combining but also save you the cost of one or two more irrigations.

Another check that you can make is to find out from your seed dealer how many heat units or growing degree days (GDD) are required for the crop to reach maturity. Although there are a number of methods and ways that are used to calculate GDD, the most common is the (86, 50) system where the high temperature for the day (but limited to no higher than 86 degrees) is added to the low temperature for the day (but limited to no lower than 50 degrees) and the result is divided by 2 and then 50 is subtracted from this number. Let's do an example, but an extreme one. If the high for the day is 96 degrees and the low 46 degrees then the GDD would be 86 plus 50 divided by 2 minus 50 or (86 + 50 = 136 divided by 2 = 68 - 50 = 18 GDD. Last week at Georgetown on Aug. 3 the high was 96 and the low was 79 degrees giving us [(86 + 79)/2] - 50 or 32.5 GDD. If you know the GDD required by a hybrid, you can add all the GDD from the day after planting until today and then compare the numbers to see how many more GDD are needed before the hybrid reaches maturity or black-layer. Check out some weather sites that you may have access to and see if they keep track of GDD. Otherwise you will need to obtain weather information from the nearest weather station and make the calculations yourself.

For the irrigated soybeans being produced in the state, the situation is similar. With high diesel prices and low crop prices growers need to be aware when it may no longer pay to pump more water on the crop. For irrigated beans when soil moisture (top and subsoil) is adequate, irrigation should cease between the middle of R6 and R7 to allow the soil to begin to dry out for harvest. Stop irrigation at the earlier stage if there is enough moisture in the top and subsoil to carry the beans to maturity and you’ve been receiving consistent rainfall. With the price of diesel nearly double that of last year and the low price for soybeans, the earliest possible date for cutting off irrigation could be a more profitable choice this year rather than aiming to capture
the maximum possible yield potential from the beans.

USDA’s August Supply and Demand Report

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

Corn Analysis

U.S. corn production is now forecast at 11.0 billion bushels, down 1 percent from last year and 7 percent less than 2004. USDA’s July forecast was 10.740 billion bushels. Based upon August 1 conditions, yields are expected to average 152.2 bushels per acre, up 4.3 bushels from last year. If realized, yield would be the second largest and production the third largest on record. The largest yield increase from last year is in Illinois where an average yield of 172 bushels per acre is forecast, 29 bushels per acre above last year’s drought reduced yield. Area for harvest remains at 72.1 million acres. Ending stocks for the ’06/’07 marketing year are now placed at 1.232 billion bushels, as compared to 1.077 billion bushels in the July estimate. The August report is called bearish for new crop corn futures. The season average farm price is now projected at $2.15 to $2.55 per bushel, a reduction of 10 cents per bushel from last month on both ends of the range.

World corn stocks are on the decline and are now projected at 92.88 million metric tons (mmt) for the ’06/’07 marketing year, reflecting a slight increase from last month. World corn carryover from the ’05/’06 marketing year was 127.08 mmt.

Soybean Analysis

U.S. soybean production is now forecast at 2.93 billion bushels, down 5 percent from 2005 and down 6 percent from 2004. Based upon August 1 conditions, yields are expected to average 39.6 bushels per acre, down 3.7 bushels from the record high U.S. yield last year. Area for harvest remains at 73.9 million acres, up 4 percent from 2005. Ending stocks for U.S. soybeans are now projected at 450 million bushels for the ’06/’07 marketing year, 110 million bushels less than a month ago. The season average farm price was left unchanged from last month at $5.00 to $6.00 per bushel. The August report is called bullish for soybeans.

The production forecast for the Southern Hemisphere remains at 97.3 mmt.

Marketing Strategy

Due to large carry-over for both the U.S. corn and soybean complex from the ’05/’06 marketing year, this morning’s report is hitting the trading pits fairly hard. Longer term it is important to consider that U.S. corn use for the current marketing year is outpacing production. U.S. soybean use for the current marketing year is also outpacing production. Recently, it was reported that soybean production in the Southern Hemisphere is projected to be reduced for the 2007 crop year, by approximately six or seven percent. Now is not the time to be advancing new crop corn and soybean sales.

Weather Summary

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

Week of August 3 to August 9, 2006

Readings Taken from Midnight to Midnight

Rainfall:
0.01 inch on August 3
0.34 inch on August 7

Air Temperature:
Highs ranged from 96°F on August 3 to 85°F on August 9.
Lows ranged from 79°F on August 3 to 63°F on August 6.

Soil Temperature:
84°F average.
(Soil temperature taken at a 2” depth, under sod)

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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