Soybean Rust Update

As we went to press last week AL had its first SBR detection on soybean, making it the second detection on soybean in sentinel plots this season. There have been no new reports of soybean rust on commercial soybeans yet. Good news. LA did have a rust detection on kudzu on June 30 making it the first SBR detection in Louisiana for 2006.

In Delaware, nineteen soybean fields are being checked weekly for soybean rust including the five sentinel plots. The sentinel plots were sampled (leaves removed for microscopic examination) for the first time this week. Septoria brown spot is present in all of the sentinel plot samples. Six more double-crop fields will be added as soon as they are planted.

Bob Mulrooney

Vegetables

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

Crop Pest Hotline

Although trap catches have been low, we will soon enter the time when moth catches generally start to increase. In addition to our website, you can call the Crop Pest Hotline at (800) 345-7544 (in state) or (302) 831-8851 (out of state) for the most recent trap catches.

Melons

Even with the all of the wet weather, we can still find fields with spider mites. The threshold for mites is 20-30% infested crowns with 1-2 mites per leaf. With most products, the best control will be achieved on a building - not an exploded population. In order to avoid the development of resistance, be sure to rotate materials.

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. Be sure to check local moth catches in your area at http://ag.udel.edu/extension/IPM/traps/latestblt.html. You will also need to consider a treatment for pepper maggot. In addition, the first beet armyworm larvae have been detected in peppers. No threshold is available, so you need to watch for the first small larvae as well as their feeding signs. You can often find small beet armyworm larvae feeding in groups on young leaves and fine webbing is produced by smaller larvae near these feeding sites. It is important to spray as soon as you see small holes and before you see this webbing since defoliation can rapidly occur. You will also need to use a product like Spintor, Avaunt, or Intrepid which provide BAW control.
Potatoes
Continue to scout fields for Colorado potato beetle (CPB), leafhoppers and aphids. In some fields, we are starting to see an increase in the number of second generation CPB adults. We continue to find economic levels of green peach aphids. Actara, Assail, Fulfill, Lannate, Monitor (green peach and potato aphid only), Provado and Vydate are labeled for aphid control in potatoes. If Fulfill is used, a penetrating surfactant should be used to achieve good coverage and optimum control. As you approach harvest, be sure to check labels carefully for the days to harvest from last application.

Snap Beans
In areas where corn borers are being caught, processing snap beans in the bud and pin stages should be sprayed for corn borer. Additional sprays may be needed after the pin spray on processing beans. Since trap catches can change quickly, be sure to check our website for the most recent trap catches and information on how to use this information to make a treatment decision in processing snap beans (http://ag.udel.edu/extension/IPM/traps/latestblt.html and http://ag.udel.edu/extension/IPM/thresh/snapbeanctthresh.html). Once pins are present on fresh market snap beans and corn borer trap catches are above 2 per night, a 7-10 day schedule should be maintained for corn borer control.

Sweet Corn
The first sprays should be applied for corn earworm as soon as ear shanks are visible. Although trap catches have been very light for the past week, this may be due to the rains, so you should still maintain a conservative spray schedule (generally a 4-day schedule). You will want to consider both blacklight and pheromone traps when making a spray decision. Since trap catches can change quickly, be sure to check trap catches twice a week. Trap catches are generally updated on Tuesday and Friday mornings. (http://ag.udel.edu/extension/IPM/traps/latestblt.html and http://ag.udel.edu/extension/IPM/thresh/silksparythresh.html). You can also call the Crop Pest Hotline for current trap catches (in state: (800) 345-7544; out of state: (302) 831-8851). We continue to find fall armyworm larvae in whorl stage sweet corn. 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.

Vegetable Crop Diseases - Bob Mulrooney; Extension Plant Pathologist; bobmul@udel.edu
Maintain spray schedules that are appropriate for the weather and for spray intervals that are on the labels. Minimum intervals should be 7 days depending on the crop and label directions. Closer fungicide application intervals will be needed during periods with weather conditions very favorable for fungal infections. Remember the fungicide application principles that were given in last week’s WCU. If you need to spray, don’t wait until after a rain to spray if you have time to make an application before a rainfall event and have conditions that allow the fungicide to dry before the rain falls. Walk your fields and look for disease problems that may be developing. Catching a problem early can make a big difference in the outcome.

Tomato and potato growers need to be on the lookout for late blight. It has been reported on tomatoes on the eastern shore in VA and on potatoes on Long Island, NY. See the potato disease advisory for more information.

Rain - Ed Kee, Extension Vegetable Specialist; kee@udel.edu
Any discussion about the recent rains seems to be excessive and painful at this point. Growers are living through a frustrating period, watching the losses and not being able to perform field operations.

I've been visiting commercial watermelon fields since 1969, and I've never seen such destruction from water. A wide range of growers, buyers, and brokers I spoke to independently arrived at the same conclusion, i.e. we can expect a 30%
loss in production. This predicted loss comes from a combination of submerged fields and loss in production in fields that aren’t submerged but are coping with the lack of sunshine, wet conditions, and disease pressure.

Nearly 200 acres of pickling cucumbers have been lost, with production losses expected to approach 15% due to wet spots, lower production, and other issues as harvesting resumes.

Predictions and conclusions on other crops are premature at this time. Certainly drowned out areas of beans, sweet corn, and other crops will take a toll.

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**Potato Disease Advisory #17 - July 7, 2006, Bob Mulrooney, Extension Plant Pathologist**

**Late blight Advisory**

Disease Severity Value (DSV) Accumulation as of July 6, 2006 is as follows:

Location: Byfield Farms field east of Magnolia, DE. Greenrow: April 23, flower buds present May 24.

Remember that 18 DSVs is the threshold to begin a spray program for late blight

<table>
<thead>
<tr>
<th>Date</th>
<th>Daily DSV</th>
<th>Total DSV</th>
<th>Spray Recs</th>
<th>Accumulated P days*</th>
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<tbody>
<tr>
<td>6/8-6/9</td>
<td>1</td>
<td>17</td>
<td>10-day</td>
<td>361</td>
</tr>
<tr>
<td>6/9-6/11</td>
<td>0</td>
<td>17</td>
<td>10-day</td>
<td>378</td>
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<tr>
<td>6/12-6/14</td>
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<td>18</td>
<td>10-day</td>
<td>406</td>
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<tr>
<td>6/14-6/15</td>
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<td>20</td>
<td>10-day</td>
<td>415</td>
</tr>
<tr>
<td>6/15-6/18</td>
<td>0</td>
<td>20</td>
<td>10-day</td>
<td>438</td>
</tr>
<tr>
<td>6/18-6/20</td>
<td>1</td>
<td>21</td>
<td>10-day</td>
<td>453</td>
</tr>
<tr>
<td>6/20-6/21</td>
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<td>21</td>
<td>10-day</td>
<td>460</td>
</tr>
<tr>
<td>6/21-6/23</td>
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<td>23</td>
<td>10-day</td>
<td>474</td>
</tr>
<tr>
<td>6/24-6/25</td>
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<td>27</td>
<td>7-day</td>
<td>492</td>
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<td>30</td>
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<td>501</td>
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<tr>
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<td>42</td>
<td>7-day</td>
<td>575</td>
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</tbody>
</table>

➢ Continue to make fungicide applications for late blight and early blight control.
➢ Fungicide rates should be at the high end of the rate range at this time of the season.
➢ There has been a report of late blight in one field of ‘Reba’ on Long Island, NY on July 5. The area has had large amounts of rain like we have.

The high rainfall events along with high humidity were very favorable for late blight infection if the fungus is present. Fungicide applications should be made if no fungicide has been applied in the last 7 days. If you have kept up with your preventative sprays continue with a high rate of chlorothalonil (Bravo or a generic) or mancozeb (Dithane, Manzate, Penncozeb, etc). With the possibility of thundershowers and humid conditions diseases such as early blight, and bacterial aerial stem rot are likely to be seen. Aerial stem blight or aerial black leg has been seen in the region. The cooler nights and highs in the low to mid-80s will be favorable for late blight so keep watch and keep up your sprays.
Manganese Toxicity in Cantaloupes - Gerald Brust, Extension IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu

After the heavy rains we have had growers on the Delmarva Peninsula may start seeing leaf symptoms on cantaloupe plants now or in the next week or two that are often misdiagnosed as a foliar disease. However, these leaf symptoms described below indicate manganese (Mn) toxicity which is related to low soil pH.

Symptoms: Symptoms of manganese toxicity usually appear on older leaves of cantaloupe when fruit begin to net or when fruit are the size of billiard balls and there have been heavy rains. Worse symptoms appear shortly before harvest and in lower areas of the field. The best way to determine whether or not you have Mn toxicity is to take an affected leaf and hold it up to the sun. Tiny pin-hole sized lesions with yellow halos clustered between the veins will be visible (Fig. 1). As the lesions mature, they will coalesce, and turn brown (Fig. 2). Some rows often seem to be worse than adjacent rows. Affected plants frequently appear as clusters in the field. Moderately to severely affected cantaloupe plants will demonstrate poor vegetative growth and reduced or incomplete fruit maturation. The combination of all these symptoms often can be confused with several infectious diseases. Sometimes growers will increase their fungicide sprays thinking they have a disease spreading throughout their field.

Figure 1. Manganese toxicity symptoms on a cantaloupe leaf

Figure 2. Later stage manganese toxicity symptoms on cantaloupe

Cause: Manganese toxicity is caused by soil pH levels that are below 5.6. Excess soil acidity allows manganese that is normally bound to soil particles to be released and taken up by the plant in very high concentrations, i.e., toxic levels. Manganese levels of 800-900 ppm and above in foliar tissue are usually toxic. Losses to manganese toxicity can be severe. The apparent “spread of the disease” is due to plants in the field where pH is lower developing symptoms first and plants in areas where the pH is not as low developing symptoms days or even weeks later. Growers may have had their soil tested and spread lime in the fall but still have this problem—low pH in some parts of the field.

One of the reasons for the drop in pH, even though lime has been applied, is the use of pH lowering fertilizers such as ammonium and urea. Ammonium sulfate, \((\text{NH}_4)_2\text{SO}_4\), can significantly lower pH, while ammonium nitrate \((\text{NH}_4\text{NO}_3)\) and dried blood make soil moderately more acid, and urea makes soil only slightly more acid. Ammonium is made up of nitrogen and hydrogen and over time is converted to nitrate by soil bacteria, the warmer the soil, the faster the conversion. During the conversion to nitrate, nitrogen loses hydrogen and adds oxygen. The hydrogen particles (ions) are free in the water solution between soil particles to react with various substances. Plants have difficulty obtaining the nutrients they need in the proper amounts, when the soil water solution has too many hydrogen ions (low pH). If the nitrogen is applied under the plastic this microclimate can influence pH problems. In some cases the low pH value is temporary and the pH of the soil will
increase as the fertilizer completes its reaction with the soil (this however depends on the soil’s buffering capacity). Acidifying fertilizers have a long term effect on soil that is cumulative and leads to lower pH levels.

Symptoms of Mn toxicity are worse after heavy rains or in low areas of the field because of the lack of soil oxygen, which results in changes in the availability of some nutrients like manganese. Under saturated soil conditions manganese is made more readily available to plants and in low pH soils the likelihood of manganese toxicity increases.

Magnesium (Mg) deficiency is also a possibility when pH levels drop below 5.6. In this case plants do not take up enough of the nutrient. Deficient plants exhibit interveinal chlorosis (yellowing between veins with veins remaining green, Fig. 3). If soils are acidic and low in Mg, dolomite lime can be used as a magnesium source.

Prevention: Soil pH levels should be maintained above 6.3. Soil tests on sandy soils need to be done every year, at least for pH levels. The pH levels can change even after one year on sandy, low organic matter soils. Lime should be mixed into the soil at least several months before planting. While many plants do not grow well in acidic soils, cantaloupe is especially sensitive to the lower pH levels. Watermelon will rarely show signs of Mn toxicity even at a low pH. There is very little that can be done to correct for manganese toxicity during the season. Some growers have tried using pelletized lime between the beds to raise pH levels usually with little success. Other treatments may exist and are being experimented with this year, but will take several years to be available even if they do work.

Agronomic Crops

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

Alfalfa
Continue to sample fields for leafhopper adults and nymphs. The treatment thresholds are 20 per 100 sweeps on alfalfa 3 inches or less in height, 50 per 100 sweeps in 4-6 inch tall alfalfa and 100 per 100 sweeps in 7-11 inch tall alfalfa. Remember, leafhoppers can quickly damage regrowth, so be sure to routinely sample fields.

Soybeans
In addition to grasshoppers, a number of defoliators can be found in soybeans including green cloverworms and Japanese beetles. No controls will be needed until you find 30% defoliation pre-bloom and 15% during bloom. As a general guideline, you should also find 10-15 cloverworms or 7 Japanese beetles per foot of row. Unfortunately, we do not have a threshold for the number per sweep.

Even with the recent rains, be sure to continue to check fields for spider mites. A treatment is recommended if you find 20-30 mites per leaflet or 10% of plants with 1/3 or more leaf area damaged. Although edge treatments can work in the right situation, it will be important to scout the entire field before deciding if an edge treatment is enough.

Be sure to also scout fields on a weekly basis for soybean aphids. Extremely low levels have been found in all 3 counties. The action threshold – developed in the Midwest - is an average of 250 aphids per plant, on plants sampled throughout the field.
Announcements

MELCAST Site is Down

Due to internet problems at the Lower Eastern Shore Research and Education Center (LESREC) MELCAST cannot be updated. Continue to spray melons on a weekly basis. Hopefully the MELCAST site will be available again sometime next week (July 10th -14th).

Risk Assessment Workshops for Crop Producers

Risk Assessment Workshops sponsored by the USDA’s Risk Management Agency are scheduled in each county. Learn how to identify all types of risks in your farm operation, discover strategies to reduce or eliminate some or all of the risks (including crop insurance and Farm Service Agency programs), and develop your own risk management plan specific to your operation.

Coffee and donuts will be served.

Monday July 17, 2006  8:30 a.m.
Kent Co. Farm Service Agency
800 Bay Rd. Dover, DE

Tuesday July 18, 2006  9:00 a.m.
Blackbird Community Center
120 Blackbird Forest Rd. Townsend, DE

Wednesday July 19, 2006  9:00 a.m.
Carvel Research and Education Center
16483 County Seat Hwy. Georgetown, DE

If you need additional information contact Cory Whaley (302) 856-7303

Weather Summary

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

Week of June 29 to July 5, 2006

Readings Taken from Midnight to Midnight

Rainfall:
0.52 inch on July 3
0.46 inch on July 4
0.66 inch on July 5

Air Temperature:
Highs Ranged from 91°F on July 4 to 82°F on June 30.
Lows Ranged from 71°F on July 4 and July 5 to 63°F on July 1.

Soil Temperature:
80°F average.
(Soil temperature taken at a 2 inch 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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