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

Cucumbers.
Continue to scout for cucumber beetles and aphids. Fresh market cucumbers are susceptible to bacterial wilt, so treatments should be applied before beetles feed extensively on cotyledons and first true leaves. Pickling cucumbers have more tolerance to wilt, but a treatment may be needed if you find 2 or more beetles per plant and significant damage can be found on the cotyledons. A treatment should be applied for aphids if 10 to 20 percent of the plants are infested with aphids with 5 or more aphids per leaf. Fulfill, Thionex or Lannate will provide aphid control. Be sure to watch for bees foraging in the area and avoid insecticide applications on blooming crops. A pyrethroid, Lannate, Sevin or Thionex are labeled for cucumber beetle control in cucumbers.

Melons.
Continue to scout all melons for aphids, cucumber beetles, and spider mites. If spider mite populations are high at the time of treatment, 2 sprays spaced 5 days apart may be needed. The threshold for mites is 20-30 percent infested crowns with 1-2 mites per leaf. Acramite, Capture, Danitol, Agri-Mek or Kelthane will provide control, but should be rotated to avoid the development of resistance.

The treatment threshold for aphids is 20 percent infested plants with at least 5 aphids per leaf. Continue to watch fields carefully for cucumber beetles. Be sure to look under the plastic where beetles can often hide until disturbed. Be sure to watch for bees foraging in the area and avoid insecticide applications on blooming crops.

Peppers.
In areas where corn borer trap catches are above 2 per night and pepper fruit is ½ inch in size or larger, fields should be sprayed on a 7-10 day schedule for corn borer control. If fruit is not present, larvae hatching from egg masses will feed on the leaves then move into the petioles and stems. For these fields, a pyrethroid application should be considered especially if egg masses are found and trap catches are above 10 per night in your area.

Correction to the Vegetable Recommendations for Acephate(Orthene) on Peppers.
If you read the current Orthene 75S label (as well as all current acephate labels), European corn borer control (ECB) is only listed under bell peppers and the rate is 1-1.33 lb per acre of Orthene 75S (not 0.67-1.33 as listed in the book). After talking to Valent, it appears that ECB was mistakenly dropped from the non-bell pepper label. The current label states aphid control only at a rate of 0.67 lb/acre. (Orthene 75S). Another difference is the maximum amount allowed on each pepper type (bell versus non-bell). Regardless of the formulation (Orthene 97, Orthene 75S or generic acephate),
the maximum amount allowed for bell peppers is 2 lb ai/a/season. On non-bell peppers the maximum amount is 1 lb ai/a/season. Valent Corporation (manufacturer of Orthene 97) has agreed to submit a 2ee label to EPA for DE, MD, NJ, PA, and VA to add corn borer back on the Orthene 97 label for non-bell peppers at a rate of ¾ - 1 lb per acre. With this label change, you will be limited to one Orthene (acephate) application for corn borer control on non-bell peppers. We will let you know when we receive the 2ee label.

**Potatoes.**
Continue to scout fields on a weekly basis for Colorado potato beetle (CPB) adults and larvae. The treatment threshold for adults is 25 beetles per 50 plants and defoliation has reached the 10 percent level. The larval threshold is 4 small larvae per plant or 1.5 large larvae per plant. The threshold for each should be reduced by 1/3 to 1/2 if all stages are present. Avaunt + PBO, Actara, cryolite, Spintor or Provado will provide control. Economic levels of potato leafhopper adults and nymphs can be found in many fields. As a general guideline, controls should be applied if you find ½ to one adult per sweep and/or one nymph per every 10 leaves. Dimethoate, a pyrethroid, Actara or Provado will provide control.

**Snap Beans.**
All fields should be scouted for leafhopper and thrips activity, especially seedling stage beans. The thrips threshold is 5-6 per leaflet and the leafhopper threshold is 5 per sweep. If both insects are present, the threshold for each should be reduced by 1/3. Dimethoate, Lannate, Asana, Capture, or Warrior will provide control of both insect pests. Once corn borer catches reach 2 per night, fresh market and processing snap beans in the bud to pin stages should be sprayed for corn borer. Acephate should be used at the bud and pin stages on processing beans. Once pins are present on fresh market snap beans and trap catches are above 2 per night, a 7-10 day schedule should be maintained for corn borer control. Lannate, Asana, Capture, Warrior or Mustang are labeled. Acephate has a 14-day wait until harvest. Be sure to check our website ([http://www.udel.edu/IPM/traps/latestblt.html](http://www.udel.edu/IPM/traps/latestblt.html)) for the most recent moth catches in your area.

**Sweet Corn.**
All silking sweet corn should be sprayed on a 4-5 day schedule.

**Vegetable Crop Diseases** - Bob Mulrooney, Extension Plant Pathologist, University of Delaware, bobmul@udel.edu

**Belly Rot on Pickling Cucumbers.**
This fungus disease of the fruit is an often frustrating disease to prevent. The causal fungus *Rhizoctonia solani* is very common and can remain viable in the soil for many years. It has a very large host range and rotations are not very effective in control of Rhizoctonia. The optimum temperature for infection is 81°F and high humidity under dense foliage also contributes to favorable conditions for fruit infection. Rotations away from cucurbits can help as well as deep plowing before planting to bury the fungus. The most favorable conditions for belly rot are usually in July and early August following an early crop of pickles. Unfortunately fungicide control has always been inconsistent. The only labeled control is applications of Quadris or Amistar at the four leaf stage and again at flop or vine tip-over. This application timing requires another application in addition to any fungicide sprays for Phytophthora fruit rot control. (See last week’s newsletter for info on Phytophthora fruit rot control.)
Potato Disease Advisory.

Disease Severity Value (DSV) Accumulation as of June 9, 2004 is as follows:
Location: Joe Jackewicz Farm, Magnolia, DE. Greenrow: April 25, 2004

<table>
<thead>
<tr>
<th>Date</th>
<th>Daily DSV</th>
<th>Total DSV</th>
<th>Spray Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/25-5/18</td>
<td>4</td>
<td>18</td>
<td>7-day</td>
</tr>
<tr>
<td>5/19</td>
<td>4</td>
<td>22</td>
<td>7-day</td>
</tr>
<tr>
<td>5/20</td>
<td>2</td>
<td>24</td>
<td>7-day</td>
</tr>
<tr>
<td>5/21</td>
<td>2</td>
<td>26</td>
<td>7-day</td>
</tr>
<tr>
<td>5/25</td>
<td>5</td>
<td>31</td>
<td>7-day</td>
</tr>
<tr>
<td>5/27</td>
<td>3</td>
<td>34</td>
<td>7-day</td>
</tr>
<tr>
<td>5/30</td>
<td>8</td>
<td>42</td>
<td>7-day</td>
</tr>
<tr>
<td>5/31</td>
<td>1</td>
<td>43</td>
<td>7-day</td>
</tr>
<tr>
<td>6/1</td>
<td>1</td>
<td>44</td>
<td>7-day</td>
</tr>
<tr>
<td>6/4</td>
<td>17</td>
<td>61</td>
<td>5-day</td>
</tr>
<tr>
<td>6/7</td>
<td>2</td>
<td>63</td>
<td>5-day</td>
</tr>
<tr>
<td>6/8</td>
<td>1</td>
<td>64</td>
<td>5-day</td>
</tr>
</tbody>
</table>

The period beginning late June 4 and continuing through the 5th, 6th and the 7th produced 61 continuous hours of humidity above our threshold. This produced the big jump in DSV’s. Hopefully, you will be able to apply a fungicide for disease control as soon as possible.

The seven day spray schedule is probably the most practical for growers although the model is calling for a 5-day spray interval at this time.

Growers who do not want to rely only on the DSV calculations for scheduling fungicide applications should apply mancozeb (Dithane, Pencozeb, Manex II) or Bravo before plants canopy down the row and repeat on a 7-day schedule. Late blight has not been a problem here in Delaware for many years and unless you have seed from an unknown source the risk of late blight is very low.

Early Blight and Black Dot.
Many fields are flowering or approaching flowering and this is a good time to consider switching to an application or two of Gem, Headline or Quadris (Amistar) for early blight susceptible varieties. This can also be helpful for late season varieties including russets if stress makes plants susceptible to black dot. Make one or two applications at the end of flowering and repeat 14 days later.

If pink rot control is important and you did not treat at planting, foliar applications of either Ridomil Gold MZ or Ridomil Gold/Bravo, or Flouronil when tubers are nickel-sized is suggested. A second application should be made 14 days later. For specific fungicide recommendations, see pages F132-33, 2004 Delaware Commercial Vegetable Production Recommendations Book. EB 137.
Hollow Heart of Watermelons - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu

Watermelons have grown a lot in the past 10 days, growers are now beginning fungicide sprays, scouting for insects and mites, and applying nitrogen. While there is no special reason to anticipate any excess hollow heart problem, it is a good time to discuss what can cause this physiological problem. Chris Wein, of Cornell writes, “This disorder is characterized by the separation of the inner parts of the fruit into distinct segments, leaving hollow areas at harvest maturity. Hollow heart occurs more often in the first-formed fruit on the plant, as a result of excess nitrogen fertilization and delayed harvests. The disorder is more prevalent under conditions of rapid fruit growth rate, when the rind is expanding more rapidly than the inner regions of the fruit. Ways of avoiding the condition include selection of less susceptible cultivars, and using cultural practices that moderate fruit growth rate and final fruit size. These include adequate plant populations, moderate levels of nitrogen, and prompt harvests.”

Sandea Can Carryover to Some Vegetables - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Sandea is labeled for use in a number of vegetable and melon crops. However, it is not safe for all vegetables and this includes vegetables planted in rotation with crops treated with Sandea (halosulfuron). Last year a few fields were planted with pickles, treated with Sandea, and rotated to spinach. The spinach crop was injured due to halosulfuron carryover. So check your herbicide labels to be sure there are no problems with herbicide carryover.

Field Crops

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

Alfalfa.
Continue to sample all fields on a weekly basis for leafhopper adults and nymphs. Once fields are yellow, stand and yield loss has already occurred. We are starting to see a significant increase in nymphs which often cause damage very quickly. 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. Baythroid, dimethoate, Mustang or Warrior will provide effective control. Early cutting is also a control option, but be sure to check fields within a week of cutting for leafhoppers.

Field Corn
Continue to scout corn for grasshoppers feeding on small plants. A grasshopper treatment should be considered if you find 5-8 grasshoppers per square yard. Asana, Dimethoate, Lorsban, Furadan and Warrior will provide control but multiple applications may be needed.

Continue to scout whorl stage corn for European corn borer. Corn borer control will not be needed until 50% of the planted are infested in irrigated fields and 80% of the plants are infested in dry land fields. Since corn is growing quickly, the best time for control will be just at pre-tassel or tassel emergence as long as larvae have not bored into the midribs of leaves.

Soybeans.
Grasshopper and bean leaf beetle feeding continue to be found in seedling stage soybean fields. A treatment for bean leaf beetle will be needed from plant emergence to the second trifoliate when you find 2 beetles per ft. of row and a 25% stand reduction. A pyrethroid, dimethoate or Lorsban will provide control. The treatment threshold for grasshoppers is 1 per sweep and 30% defoliation. Asana, Furadan,
Lorsban, or Warrior will provide grasshopper control. We are starting to see a significant increase in the number of thrips in soybean. However, no treatment is needed until you find 8 thrips per leaflet, and plant growth is being held back.

Field Crop Diseases - Bob Mulrooney, Extension Plant Pathologist, University of Delaware, bobmul@udel.edu

Small Grain.
Barley harvest is underway and from a disease perspective small grain diseases have been relatively minor compared to last year. A few scattered fields in the northern part of the state have had some head blight or scab (estimate at less than 1 percent) and some tan spot. At this point rust is showing up now on any wheat that is late, but will not affect yield. The major problem downstate appeared to be drought damage especially on sandy knolls. Some fields have sooty mold where the drought damaged plants died prematurely and these black fungi grow saprophytically on the heads.

Field Corn.
Anthracnose leaf blight is showing up in scattered areas on corn following corn and corn fodder is present. There are large differences in susceptibility among hybrids as you can imagine. Usually seedling infections or infection of young plants is not important and the corn often grows out of it. If the hybrid is susceptible and favorable weather for infection occurs later in the season, the spores from the early infection can infect the leaves and/or stalks and cause problems later. Anthracnose stalk rot is very common throughout Delaware, especially when corn borer damage is present. Leaf symptoms can vary depending on the hybrid, environment and age of the leaf, but generally look for 1-2 inch long elliptical spots with tan centers and red, reddish-brown or yellow borders. With a 10X hand lens you can often see the small hair-like structures called setae rise above the spots, which is a positive diagnostic feature for anthracnose.

Careful of Surfactant Use In This Weather - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Due to overcast skies and ample moisture, plants have very thin cuticles which may result in increased injury with postemergence herbicides. Nitrogen additives are most likely to cause crop injury with this weather. Also, consider using non-ionic surfactant rather than crop oils to reduce the risk of injury. University of Delaware data supports use of non-ionic surfactants over crop oil concentrates because it provides similar levels of weed control as crop oils with less risk of injury. This has been true in weather patterns such as we are experiencing as well as in dry weather.

Do Not Assume a Second Application of Glyphosate is Always the Answer - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

In many Roundup Ready soybean fields, if the level of weed control is less than acceptable, the automatic response is a second application of glyphosate. A second glyphosate application will certainly help with many species that glyphosate provides only marginal to fair control (morningglory, smartweed, velvetleaf, etc). However, where control was poor for only one species (all other species were controlled) and there is not an apparent reason, you may want to consider an alternative herbicide rather than using more glyphosate. University of Delaware Weed Science as well as reports from Mid-West Universities, indicate populations of lambsquarters that are more difficult to control with glyphosate than other lambsquarters populations. Situations where only one species experience less than expected control should
cause you to think about alternatives to additional glyphosate applications.

**Harvest Aid for Small Grain** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Roundup WeatherMax (up to 0.7 qt/A) or Touchdown (up to 1 qt/A) are labeled as harvest aids in winter wheat and barley. Applications must be made after the hard-dough stage and at least 7 days prior to harvest.

**Cultivation and Postemergence Herbicide Treatment** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Questions have come in about whether to cultivate first or spray first for weed control. Keep a few things in mind. Weeds are easier to control when they are small, but consider which option is going to be more effective when weeds get larger. Cultivation will control the weeds between the rows but not in the row. Those weeds in the row are the ones you need to base your decision on whether to spray first. More often than not, it is better to spray first then cultivate. Also, weeds not completely killed with cultivation are more difficult to control with herbicides. **Note this assumes that the herbicide is the right herbicide for the weed(s) in your field. The weeds that emerge after cultivation are going to be much smaller and have a less impact on yield (if any impact at all). Setting your cultivator so it runs only 1 to 2 inches deep will slice through the weeds and not disrupt the herbicide layer from your preemergence herbicides. This in turn will limit the number of weeds that will emerge due to cultivation. It is generally recommended to wait a minimum of 5 to 7 days between herbicide treatment and cultivation.

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

**Domestic Highlights.**
The ink is still wet on the long awaited June crop report as we begin to decipher the meaning of the contents of this report. At first glance the report may be called bearish for soybeans and wheat. For the current crop year wheat ending stocks were revised slightly upward increasing 15 million bushels to 541 million bushels, corn ending stocks downward 10 million bushels to 806 million bushels, with soybean ending stocks left unchanged at 115 million bushels. For the next '04/'05 marketing year, wheat ending stocks were reduced 4 million bushels, corn stock estimates left unchanged from the previous month at 741 million bushels, with the U.S. soybean ending stocks estimate increasing 30 million bushels from the May report to 220 million bushels. Wait a minute! Just how firm can market analysts expect these numbers to be? Let’s consider what's not factored into the supply and demand balance sheets that have arrived at the ending stock estimates given above.

Not factored in would be the Quarterly Grain and Soybean Stocks and the Annual Acreage reports which are not due out until June 30. This places much burden on the July Crop report, particularly for U.S. corn. Therefore, one should not expect any significant price reaction to the contents of this report. Commodity trader attention is likely to turn to putting more weight on Corn Belt weather and current demand. Weekly exports, also released this morning, reported sales of 14.2 million bushels for wheat, 3.8 million bushels for corn, and 0.2 million bushels for soybeans.

Perhaps the negative take in this report will be the increase in world soybean stocks that are expected to occur in the '04/'05 marketing year. For next year, USDA is projecting a combined Southern Hemisphere soybean crop at 113 million bushels, accounting for half of '04/'05 global production. The Brazilian soybean crop, projected at 66 million tons for the '04/'05 marketing year would be 25% larger than the drought reduced '03/'04 crop. '03/'04 Brazilian
soybean production for the current '03/'04 marketing year was placed at 52.6 million metric tons, as compared to USDA's original projection of 61 million metric tons back in February.

Additionally, world ending stocks for both corn and wheat were raised from the previous report.

**Global Highlights.**

Perhaps the coming attraction in these markets is something that we have been eluding to at the Delaware Grain Marketing Strategies Conferences for the past couple of years. That is, world coarse grain consumption continues to outpace production both in the current '03/'04 marketing year and into the '04/'05 marketing year. In fact, the stocks-to-use ratio in the '04/'05 marketing year is projected to reach record low levels. Additionally, China is reducing their corn exports in half this year due to China's domestic use outpacing production. This is likely to benefit U.S. corn exports which are on track to reach a 6-year high for world export market share.

**Marketing Strategy.**

Not much has changed since visiting this subject a week ago. We have another month to go before getting a better handle on '04 U.S. corn production. '04 U.S. soybean production expectations aren't likely to be firmed up until the August crop report. Current crop condition reports do not appear to be concerning these markets at this point in time. Basis levels for new crop delivery on the Eastern Shore have slipped a nickel a bushel for both corn and soybeans since last week at 15 over and 15 under, respectively. The next 60-days will be critical to this year's crop development.

---

**UPCOMING MEETINGS:**

‘Day on the Farm’ Promises Fun For Everyone

Most of us in New Castle County live in suburban or urban settings, where we're more likely to be awakened by a car alarm than the crow of a rooster. But, with 28 percent of the county classified as working farmland, agriculture is still vitally important to the region.

Learn more about modern-day agriculture here in New Castle County—and have a lot of fun doing so—at Ag Adventure, a free, educational event from 10 a.m. to 4 p.m., Saturday, June 19. Co-sponsored by University of Delaware Cooperative Extension, Ag Adventure takes place at Hoober, Inc., on Route 301, Middletown, near the Maryland line.

Ag Adventure consists of three agricultural-related events all at one convenient location, New Castle County Extension agent Carl Davis, said. The day’s happenings include an Antique Tractor Pull, the 4-H/FFA New Castle County Livestock Classic and “Day on the Farm.”

The fourth annual “Day on the Farm” features plenty of family-oriented fun, including a ‘hayride, a straw-bale maze and children’s games and activities. Cooperative Extension
professionals, University faculty and other experts will present exhibits on topics ranging from the centuries-old art of beekeeping to the high-tech wonders of the global positioning system (GPS). You’ll learn where food comes from (and no, the answer isn’t the grocery store); how biotechnology aids the farmer and consumer; and about the diversity of products created from soybean.

“Our ‘Day on the Farm’ exhibits always get rave reviews,” Davis said. “Our goal is to present hands-on learning experiences that are entertaining and educational for all ages from young kids to adults.”

“Day on the Farm” is just one part of the fun at Ag Adventure. The action and excitement of the Antique Tractor Pull is another perennial favorite. Participants use their tractors to drag a weighted sled as far as possible along a dirt track in this one-of-a-kind sport.

And, plan to visit the 4-H/FFA New Castle County Livestock Classic, which gives young 4-H and FFA member’s one last chance to get livestock experience before the Delaware State Fair. Kids of all ages will enjoy seeing the goats, sheep, pigs and cows groomed to perfection and watch as the animals are paraded through the show ring.

For more information about Ag Adventure, call New Castle County Extension at 302-831-COOP.

* Article taken from University of Delaware UDaily at http://www.udel.edu/PR/UDaily/2004/agadventure052904.html

---

**Weather Summary**

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

<table>
<thead>
<tr>
<th>Week of June 3 to June 10, 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rainfall:</strong></td>
</tr>
<tr>
<td>0.06 inches: June 4</td>
</tr>
<tr>
<td>0.43 inches: June 5</td>
</tr>
<tr>
<td>0.01 inches: June 6</td>
</tr>
<tr>
<td>0.35 inches: June 10</td>
</tr>
<tr>
<td><strong>Readings taken for the previous 24 hours at 8 a.m.</strong></td>
</tr>
<tr>
<td><strong>Air Temperature:</strong></td>
</tr>
<tr>
<td>Highs Ranged from 68°F on June 5 to 92°F on June 9.</td>
</tr>
<tr>
<td>Lows Ranged from 65°F on June 9 to 57°F on June 8.</td>
</tr>
<tr>
<td><strong>Soil Temperature:</strong></td>
</tr>
<tr>
<td>73°F average.</td>
</tr>
<tr>
<td>(Soil temperature taken at a 2 inch depth, under sod)</td>
</tr>
</tbody>
</table>

**Web Address for the U of D Research & Education Center:**

http://www.rec.udel.edu

---

**Compiled and Edited By:**

Tracy Wootten

Sussex County Extension Agent - Horticulture
University of Delaware