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

Cucumbers.
Continue to scout for cucumber beetles and aphids. We are starting to see an increase in aphid populations. In fresh market cucumbers, treatments should be applied before beetles feed extensively on cotyledons and first true leaves. In pickling cucumbers, 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. We continue to see an increase in the number of fields with spider mite infestations. If 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 (ground application only), Capture, Danitol, Agri-Mek or Kelthane will provide control, but should be rotated to avoid the development of resistance. We have also seen an increase in aphid activity. For treatments to be effective, it should be sprayed before you see significant leaf curling. The treatment threshold for aphids is 20 percent infested plants with at least 5 aphids per leaf. We can still find cucumber beetles, especially under the plastic. 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. You will also need to consider a treatment for pepper maggot. If Orthene is used, it will also provide pepper maggot control. Otherwise, dimethoate should be added to the mix.

Potatoes.
Continue to scout fields on a weekly basis for Colorado potato beetle (CPB) adults and larvae. 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 of larvae are present. Avaunt + PBO, Actara, cryolite, Spintor or Provado will provide control. We are also starting to see the emergence of summer adults. Unfortunately, most of our labeled products are most effective on larvae. The higher labeled rates of Spintor and cryolite have provided some level of adult suppression; however, may not be adequate under high population pressure. Actara, Leverage and Provado provide adult control, but
should not be used where Admire, Platinum or Gaucho were used at planting to avoid development of resistance. Economic levels of potato leafhopper adults and nymphs can still 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. At this point, no aphids have been detected in potato fields.

**New Insecticide Labeled for Potatoes.**

We now have a new insecticide labeled for Colorado potato beetle control from Crompton called Rimon 0.83 EC. It has a federal label; however, we are still waiting on the state label so it can not be used in Delaware until we have the state label. The active ingredient is novaluron, an insect growth regulator that interferes with chitin development and produces a weak or malformed insect exoskeleton. Larvae are unable to successfully molt to the next immature stage after ingestion or contact with residues. Because Rimon affects immatures at molting, control will be slower than exhibited by conventional insecticides. It should be applied at the first sign of pest infestation. Rimon will not directly affect adult insects. You can tell it is working by an absence of larvae 4-5 days after application. It is labeled at 9-12 oz/acre - the higher rate should be used on large larvae. An application should be made when egg masses are hatching within a generation. You are allowed up to two (2) applications per season against the same generation of potato beetle. Do not use it on successive generations of CPB and do not use more than 2 applications per season. There is also an aerial application restriction: Apply in a minimum of 5 gallons/A with a 150 foot buffer zone from bodies of water; all applications must include a 25 ft. vegetative buffer strip within the buffer zone to decrease runoff.

**Sweet Corn.**

All silking sweet corn should be sprayed on a 5-6 day schedule. 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 silking sweet corn (http://www.udel.edu/IPM/traps/latestblt.html and http://www.udel.edu/IPM/thresh/silkspraythresh.html).

**Watermelon Fruit Set Quite Variable**

Watermelon fruit set is quite variable as it is most years. Some fields have a good set of crown fruit, others have no crown fruit. Pollination only takes place in the morning (early) and the blossoms are only open one day. You need six to eight bee visits to the flower to carry the 1,000 pollen grains necessary for normal fruit development. To make it a little more complicated, their must be enough pollen placed on the three sections of the stigma to have a normal shape.
You need enough bees or pollinating insects to carry the pollen. The bees have to work the flowers on the day they are open. Some days are not suitable for flying. Bees need to see the ground to find their away around. They don’t fly in rainy weather or very cloudy weather. They have a minimum and maximum temperature for flying (60° to 85°F). They will not fly in very windy conditions. The better the flying conditions and more food that bees need, the more they are willing to travel far from the hive.

This year we had some very cold night temperatures which could cause young fruit to abort. Some chemicals can cause pollination problems by damaging the pollen or ovaries. We weaken colonies by spraying insecticides. It is harder to have good pollination in large blocks, because bees may not uniformly work the field. Poor flying weather when your crown fruit blossoms are open will prevent adequate movement of pollen from male flowers to females. From the crown fruit location on the runner, female flowers (those with tiny melons) occur about every 7 to 8 nodes on the runner.

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

**Potato Disease Advisory.**

**Disease Severity Value (DSV) Accumulation as of June 17, 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>
<tr>
<td>6/10-6/13</td>
<td>9</td>
<td>73</td>
<td>7-day</td>
</tr>
<tr>
<td>6/14-6/15</td>
<td>3</td>
<td>76</td>
<td>7-day</td>
</tr>
<tr>
<td>6/17</td>
<td>3</td>
<td>79</td>
<td>7-day</td>
</tr>
</tbody>
</table>
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. 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. If economic levels are present, early cutting may be the best option for control. However, be sure to check fields within a week of cutting for leafhoppers that can quickly damage small plants.

Field Corn.
We continue to get reports of cereal leaf beetle adults feeding on corn. In most cases, feeding is confined to field edges; however, it may also be seen throughout the field. No controls are needed unless you find 10 beetles per plant throughout the field and 50 percent of the plants are damaged.

Soybeans.
Grasshopper and bean leaf beetle feeding continues 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. row and a 25 percent stand reduction. A pyrethroid, dimethoate or Lorsban will provide control. The treatment threshold for grasshoppers is 1 per sweep and 30 percent defoliation. Asana, Furadan, Lorsban, or Warrior will provide grasshopper control. We are also seeing an increase in thrips and leafhopper activity. No control will be needed for thrips until you find 8 per leaflet and plant growth is being held back. The treatment threshold for leafhoppers is 4 per sweep in drought stressed fields and 8 per sweep in non-stressed fields. Dimethoate or a pyrethroid will provide control of both insects.

There have been reports of economic levels of spider mites in seedling stage soybeans in Sussex County, DE and Dorchester County, MD. In most cases, they are in no-till fields where mites overwinter in weed hosts. Look for the white stippling at the base of the leaves, which indicates the presence of mites. Treatment will be needed when you find 20-30 mites per leaflet or 10 percent of plants with 1/3 or more leaf area damaged. At this point, the only materials available for mite control in soybeans are dimethoate and Lorsban. We are gathering data on a new product and plan to submit a Section 18 if the data looks good - we will keep you posted.

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

General Comments.
"Rain Makes Grain" vs. "Flood Makes Mud" is the mantra in the commodity markets this week, depending upon whether one is bullish or bearish. It would appear that the bears are winning at the present time taking corn and soybean prices down on the idea that the rain is generally good for crop development. What is not being asked by commodity traders just yet is whether we are making a 10.4 billion bushel corn crop, or one that might be smaller or even possibly larger. Therein lies the reasoning behind the 'bear' and 'bull' arguments in these markets at the present time. It may well be the primary question on every trader's mind, "What size are the '04 U.S. corn and soybean crops likely to be?" Perhaps a clue as to what we might expect will be given in the June 30th Acreage and Stocks reports, followed by the July 12th Supply/Demand and Crop Production estimates.

U.S. corn and soybean conditions improved last week, with corn now at 70% in the good to excellent category and soybeans at 68%. Corn ratings improved 2 points and soybean ratings improved 3 points from the previous week. Nationally, wheat harvest is moving along ahead of normal at 23% harvested, as compared to 11 percent a year ago and 14 percent average.
**Glyphosate May Not Kill All Pigweeds or Lambsquarters**  
*Mark VanGessel, Extension Weed Specialist; mjv@udel.edu*

I was made aware of a few more fields where pigweed or lambsquarters were not controlled with glyphosate (active ingredient in Roundup and Touchdown and others) while all the other species were killed. These two species are known to develop resistance to a number of herbicides and are of concern among weed specialists. If glyphosate does not control these species (while all other species are killed) do not try to kill them with more glyphosate. In the Midwest, waterhemp (a species we do not have in Delmarva) was more difficult to control with glyphosate and growers have had to repeatedly increase glyphosate rates in order to control it.

In greenhouse research at UD, we have found populations of pigweed and lambsquarters that were not killed with standard rates of glyphosate, but did die with 2X or 4X rates.

If glyphosate does not control pigweed or lambsquarters do not continue to spray it with increasing herbicide rates, consider use of Harmony GT. This herbicide is quite effective on these two species and is inexpensive. However, it may cause some temporary yellowing (see following article).

**Postemergence Soybean Herbicides Reminders**  
*Mark VanGessel, Extension Weed Specialist; mjv@udel.edu*

The following are a few questions I have been answered about postemergence soybean herbicides over the past few weeks.

*Most herbicides need to be applied to weeds before they are 4 inches tall.

*All herbicides can cause some crop response, even glyphosate. Under most circumstances, this is a cosmetic effect and does not hurt yield. With that said, some herbicides have a higher risk of injury than others.

*It is sound stewardship to not rely solely on glyphosate for soybean weed control. Increasing glyphosate rates (or any herbicide) to maintain weed control could be setting up bigger problems in the future.

*Dimethoate is an organo-phosphate insecticide and should not be tank-mixed with Harmony GT, Synchrony, Classic, FirstRate/Amplyfy, Pursuit (Extreme), or Raptor.

*Manganese products can bind with glyphosate in the spray tank and reduce glyphosate’s effectiveness. The form of manganese has an impact. Manganese chelated with EDTA did not affect the performance of glyphosate, but other forms of manganese did. The addition of ammonium sulfate overcame the problem. When using ammonium sulfate be sure to add the ammonium sulfate to the tank first and add the glyphosate last.

*Many stresses can cause crop responses that look like herbicide injury. Be sure to explore all the possibilities when trying to determine the cause of crop injury.

*Most postemergence soybean herbicides have some soil activity and can provide a week or two of residual control.

**Veneman Announces The Availability of $13.2 Million in Grants to Expand Value-Added Agricultural Business Ventures**  
*USDA Places Priority on Renewable Energy Ventures*

Agriculture Secretary Ann M. Veneman today announced the availability of $13.2 million in grants that will support the development of value-added agriculture business ventures and support President Bush’s energy plan to develop alternative sources of renewable energy.

“Since 2001, the Bush Administration has committed over $100 million to support the development and enhancement of value-added...
agricultural investments,” said Veneman. “These funds will help create new job opportunities in rural communities.”

Veneman said priority consideration will be given to those grant applications that have at least 51% of project costs dedicated to planning activities for a bio-energy project. To date, the Bush Administration has funded $15 million in value-added development centers and over $85 million in value-added grants, including nearly 70 energy projects. The renewable energy projects involve bio-diesel, ethanol or wind energy production or the use of bio-mass to generate energy. As a result of these projects, 669 jobs were created. Additionally, the ethanol plants have added or will add 679 million gallons per year of capacity and the bio-diesel plants have added or will add 41 million gallons per year of capacity.

The Value-Added Producer Grant program was authorized by the Agriculture Risk Protection Act of 2000 (P.L. 106-224) and the 2002 Farm Bill (P.L. 107-171). Grants are available to independent producers, agricultural producer groups, farmer or rancher cooperatives, and majority-controlled producer-based business ventures interested in a competitively-awarded grant to fund one of the following two activities: (1) planning activities needed to establish a viable value-added marketing opportunity for an agricultural product (e.g. conduct a feasibility study, develop a business plan, develop a marketing plan); or (2) acquire working capital to operate a value-added business venture that will allow producers to better compete in domestic and international markets.

Awards will be made on a competitive basis. Applications must be received no later than July 26, 2004. Detailed information about application and program requirements will be included in the June 9, 2004 publication of the Federal Register.

USDA Rural Development’s mission is to deliver programs in a way that will support increasing economic opportunity and improve the quality of life of rural residents. As a venture capital entity, Rural Development provides equity and technical assistance to finance and foster growth in homeownership, business development, and critical community and technology infrastructure. Further information on rural programs is available at a local USDA Rural Development office or by visiting USDA’s web site at http://www.rurdev.usda.gov.

For assistance and other questions about this program, contact:

Marlene B. Elliott, State Director, USDA Rural Development, Delaware and Maryland (302) 697-4300, (302) 697-4390 fax marlene.elliott@de.usda.gov

www.rurdev.usda.gov

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**

<table>
<thead>
<tr>
<th>Rainfall:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05 inches: June 11</td>
</tr>
<tr>
<td>0.09 inches: June 12</td>
</tr>
</tbody>
</table>

Readings taken for the previous 24 hours at 8 a.m.

<table>
<thead>
<tr>
<th>Air Temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highs Ranged from 70°F on June 11 to 84°F on June 15.</td>
</tr>
<tr>
<td>Lows Ranged from 73°F on June 16 to 50°F on June 13.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil Temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>74°F average.</td>
</tr>
</tbody>
</table>

(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

Compiled and Edited By:
Tracy Wootten
Sussex County Extension Agent - Horticulture
University of Delaware

Cooperative Extension Education in Agriculture and Home Economics, University of Delaware, Delaware State University and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Delaware Cooperative Extension, University of Delaware. It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age or national origin.