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

**Melons.**
Economic levels of cucumber beetles, aphids and spider mites were found at the end of last week in watermelon and cantaloupe fields. As vines begin to run, be sure to sample carefully for spider mites. When sampling for mites, be sure to check the entire plant if plants are small or the crown area on larger plants for signs of stippling and the presence of mites. The threshold is 20-30% infested crowns with 1-2 mites per leaf. If populations of mites have exploded and adult mites are the predominant life stage, Capture or Danitol should be used. If the population is a mixture of eggs, immature mites and lower levels of adult mites, Agri-Mek should be used at 8 oz/acre. A second miticide application may be needed in 3-7 days depending on the population level at treatment time. In general, dimethoate has provided very poor mite control. In recent trials, Kelthane continues to provide good mite control and should be rotated with Capture, Danitol and Agri-Mek to avoid resistance. If populations are heavy or numerous eggs are present at the time of treatment, at least 2-4 miticide applications will be needed. Be sure to also sample melons for aphids. The treatment threshold for aphids is 20% infested plants with at least 5 aphids per leaf. Fulfill, Lannate and Thiodan are labeled on melons and will provide melon aphid control. **Actara, a new product from Syngenta, was labeled at the end of last week on cucurbits** and will also provide **effective melon aphid control.** These materials should be applied before aphids explode. Dimethoate will not control melon aphids.

**Potatoes.**
Economic levels of CPB adults and small larvae can now be found in the earliest planted fields. Spintor or Provado will provide control. **Actara, a new product from Syngenta, was labeled at the end of last week on potatoes, and will also provide effective CPB, aphid and leafhopper control.** Remember, this product has a similar mode of action to Provado and therefore should not be considered a rotational product for Provado. In addition, to avoid the development of resistance to either product, fields treated with Admire at planting should not receive foliar treatments of Provado or Actara. The first ECB egg masses have been detected in potatoes. Be sure to check our website (http://www.udel.edu/IPM/traps/latestblt.html) for the most recent moth catches in your area. In general, we tend to see an increase in moth populations as soon as temperatures increase after a period of cool rainy weather. Since we have already seen the first eggs in the earliest planted fields, a corn borer spray will be needed within 3-5 days after an increase in trap catches. Potato leafhopper populations are starting to increase in the earliest planted fields. As a general guideline, controls should be applied if you find ¼o one
adult per sweep and/or one nymph per every 10 leaves. A pyrethroid, Actara or Provado will provide control.

**Sweet Corn.**
Be sure to watch the earliest planted fields for European corn borer larvae. Infestations in the earliest planted corn range from 6-10% infested plants. A treatment should be applied if 15% of the plants are infested. The best timing for a treatment is just as the tassels are emerging from the whorls. In recent years, the best corn borer control has been achieved with Ambush, Pounce, Penncap or Warrior. We are also starting to catch our first corn earworms in blacklight traps. Trap catches are updated three times per week on the IPM website: [http://www.udel.edu/IPM/traps/latestblt.html](http://www.udel.edu/IPM/traps/latestblt.html)

**Sandea Herbicide for Cucumbers and Pickling Cucumbers - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu**

Sandea herbicide has received a 24c special local need, third party label for use on cucumbers from the Delaware Department of Agriculture for use in Delaware. Growers using this product should be members of the Vegetable Growers Association of Delaware.

Sandea can be used post-emergence at 2/3 to 1 ounce per acre on cucumbers that have reached the 1-2 true leaf stage, but no later than the 5 to 6 leaf stage. It will control cocklebur, nutsedge, pigweed, ragweed, velvetleaf and some other broadleaf weeds. This material can be helpful in pickling cucumbers when redroot pigweed escapes. Pigweed not only competes with the crop, but also can stop harvest operations.

Sandea works best when the weeds are small, less than 4 to 6 inches in height in most cases. Read the label for complete details.

**Pea Harvest Begins - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu**

Pea harvest started at one location on Thursday, May 24. Harvest will begin in earnest by May 30-31. Dry weather restricted plant growth in many locations, despite irrigation and cool conditions. However, it is too early to predict over all yields. Peas in flower or pod set/development can use a quarter inch of water/day when temperatures are 85 degrees or above.

**Princep on Sweet Corn - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu**

There has been some confusion as to whether Princep 4L or Princep Cal-90 is labeled on field corn only, or other types of corn as well. A recent communication from the manufacturer, Syngenta, confirms that both formulations of Princep are labeled for all types of corn, including sweet corn.

**Watermelon Transplant Problems - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu, Tracy Wootten, Extension Associate-Vegetable Crops; wootten@udel.edu**

We have had multiple calls this week describing watermelon transplant problems. After visiting several plantings, we have observed some commonalities that go with each situation. First, cool weather has limited the young plant’s ability to grow and get off to a quick start. It is well documented that watermelon growth slows to a near stop when temperatures are 65°F or lower. Secondly, we all need to remember that a strong, well established root system is critical to successful transplanting. The plants ability to absorb nutrients and water depends on a root system that is well developed. Some of the collapse of transplants we have seen is a direct result of limited root systems, further hindered by
cool temperatures and wind damage. This in turn limits the plants ability to move moisture from the soil, through the roots, to the stems and leaves.

Plants that have been exposed to wind are showing signs of “wind whipping”. The scarring caused by the plant stem rubbing on the edge of the plastic mulch is damaging cells and restricting water flow to the top of the plant.

As mentioned in the article ‘Dry Transplants’ from Issue 8, placement of the drip tape under the plastic can also play a role. In our loose, sandy soils there is little movement of water laterally away from the drip tape emitters. Water availability decreases dramatically as you move away from the drip tape. Depending on placement of the drip tape in the bed, an adequate water supply may not be reaching the roots of a small transplant. Later in the growing season when plants are large and have a well-established root system, this would not be a problem.

Fifteen years ago when our local industry relied on Florida grown transplants, shipped up on a truck, we experienced similar problems. Now that we use locally produced transplants, we need to implement management practices in the greenhouse that will enhance root system development. Proper cell size, adequate growing temperatures, sound fertilization practices in the greenhouse, and good hardening off practices will improve root growth. As plans are made next year, details on these practices can be obtained from your extension office and with your plant producer.
MELCAST - Kate Everts, Extension Vegetable Pathologist, University of Delaware and University of Maryland; everts@udel.edu

MELCAST for Watermelons
The weather based forecasting program MELCAST has begun for 2001. If you signed up to receive a report, it should have started this week. If you have not received any reports please call Lisa Dorey at (302)856-7303 and give us your name and Fax number or e-mail address. In addition, this information is available on the web at http://www.agnr.umd.edu/users/vegdisease/vegdisease.htm.

To use MELCAST for watermelons, apply the first fungicide spray when the watermelon vines meet within the row. Additional sprays should be applied using MELCAST. Accumulate EFI (environmental favorability index) values beginning the day after your first fungicide spray. Apply a fungicide spray when 30 EFI values have accumulated by the weather station nearest your fields. Add 2 points for each overhead irrigation. After a fungicide spray, reset your counter to 0 and start over. If a spray has not been applied in 14 days, apply a fungicide and reset the counter to 0 and start over.

Because of widespread resistance to Quadris in our area, chlorothalonil (Bravo, Equus or Terranil) is recommended when spraying according to MELCAST. If, for some reason, a serious disease outbreak occurs in your field, return to a weekly spray schedule.

MELCAST for Cantaloupes and TOMCAST for Tomatoes
In addition to MELCAST for Watermelon, we have added two models that are designed to help you make decisions on when to spray for diseases. MELCAST for Cantaloupes is a fungicide application program for Alternaria leaf blight. It can be used by anyone growing a powdery mildew resistant variety such as Athena. To use MELCAST for Cantaloupe, apply the first fungicide spray when the cantaloupe vines meet within the row. Additional sprays should be applied using MELCAST. Accumulate EFI (environmental favorability index) values beginning the day after your first fungicide spray. Apply a fungicide spray when 20 EFI values have accumulated by the weather station nearest your fields. Add 2 points for each overhead irrigation. After a fungicide spray, reset your counter to 0 and start over. If a spray has not been applied in 14 days, apply a fungicide and reset the counter to 0 and start over.

TOMCAST is a spray forecaster for leaf blights and fruit diseases of processing tomato. However, it does not work for bacterial diseases. In fields are not rotated away from tomatoes and in late-planted fields begin sprays shortly after transplanting. In all other areas begin sprays when crown fruit are one-third their final size. Additional sprays can be scheduled using TOMCAST. Sprays should be applied after accumulating 18 DSV’s (disease severity values) since the last fungicide application. Scout fields for late blight. If late blight occurs additional sprays are warranted (see Delaware Extension Bulletin137).

The three disease models are available at http://www.agnr.umd.edu/users/vegdisease/vegdisease.htm. In addition you can receive the models by e-mail or fax. To sign up, please call Lisa Dorey at (302)856-7303.
Vegetable Diseases - Kate Everts, Extension Vegetable Pathologist, University of Delaware and University of Maryland; everts@udel.edu

MELCAST for Watermelons

EFI Values (Environmental Favorability Index)
Do not use MELCAST if there is a disease outbreak in your field, it is a preventative program. Any questions, please call David Armentrout at (410) 742-8788 or e-mail: da88@umail.umd.edu

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Watermelon Fields should be sprayed with a fungicide when 30 EFI values have been accumulated by the weather station nearest your fields. Add 2 points for every overhead irrigation. After a fungicide spray, reset your counter to 0 and start over. If a spray has NOT been applied in 14 days, apply a fungicide and reset the counter to zero. The first and last day above can be partial days so use the larger EFI value of this report and other reports for any specific day.

More detailed information concerning MELCAST and sample data sheets are available on the web at http://www.agnr.umd.edu/users/vegdisease/vegdisease.htm.

Field Crops

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

Alfalfa.
Continue to sample fields for potato leafhopper adults, especially on spring seedings and within one week of cutting for established stands. Once the damage is found, yield loss has already occurred. 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. Ambush, Baythroid, dimethoate, Pounce or Warrior will provide effective control.

Field Corn.
We continue to hear about fields with high grub populations that were not treated at planting. In general, rescue treatments have not worked for grubs. I have only seen one example of effective control in 22 years when Lorsban was applied and 2-inches of rain washed the material into the soil. If grubs are causing stand loss and there is still time to make a replant decision, the field should be re-planted and a soil insecticide used in-furrow (Counter or Force have been the most consistent in our area). In addition to no-till fields planted into burned down small grain covers, you should watch for armyworms moving from small grain fields into nearby corn fields. The treatment threshold for armyworms in corn is 25% infested plants with larvae less than one-inch long. A pyrethroid will provide effective control. Continue to scout fields for cutworms through the 5th leaf stage - economic levels of cut plants continue to be found. With the recent rains, rescue treatments should be effective.
**Small Grains.**
Continue to sample barley and wheat for armyworm populations. Although not all fields will need a treatment, populations are higher and more widespread this year. In most cases, the majority of larvae have hatched by now so fields should be treated if economic levels have been found. The treatment threshold on wheat is 2 per foot of row and on barley the threshold is one per foot. On wheat, Warrior, Lannate or Parathion can be used. On barley, Lannate or Parathion can be used.

**Soybeans.**
As we start to see an increase in soybean acreage being planted, be sure to consider a seed treatment in no-till fields for seed corn maggots. Seed corn maggot will remain a potential problem through early June. Flies continue to lay eggs and maggots will be present at the time of seed germination. The only hopper box treatment available with a soybean label is Kernel Guard Supreme. The active ingredient is permethrin and it should be used at a rate of 1.5 oz per 50 lbs. of seed. For those who have soybeans just emerging from the ground, be sure to scout for spider mites and grasshoppers. The treatment threshold for grasshoppers is 1 per sweep and 30% defoliation. Asana, Furadan, Lorsban and Warrior will provide control, although multiple controls may be needed.

These things, among others, are making the business of grain marketing extremely difficult. However, low commodity prices and historically high production costs leave little room for mistakes.

In grain trading, we need to be ever mindful of the term 'externality'. Externalities are the unexpected things that come up just when no one was looking or expecting a particular event to happen. An example of a recent world event in the wheat market can be labeled an externality. The wheat market was just beginning to show promise of bidding new crop wheat futures to the $3.00 per bushel level on the Chicago Board of Trade when a revised USDA estimate placed China's combined stocks of wheat, rice, and course grains at the end of the 2000/01 marketing year at 230.1 million metric tons, 61% of China's annual domestic consumption. Prior to this, the April 10, 2001 report had pegged the combined stocks at only 66.1 mmt, just 17.3% of consumption. That can well be viewed as an externality. The wheat market lost an insuing 30 cents per bushel in the course of about a week, primarily due to this one unexpected event occurring.

**General Comments**
Currently, commodities are over sold across the board with little reason being given to turn things around. In the short term, we are likely to see only slight increases in commodity prices until something else comes along to move the market.

Presently, there are two factors that can rally the grain markets this summer. One is a ‘weather market’, if and when that might materialize. The other is an externality that might occur, that no one is currently anticipating and/or paying any attention to. Let’s see, what might that externality be? The possibilities are endless. For technical assistance on grain marketing, contact Carl German <clgerman@udel.edu> or 302-831-1317.
Will Those Corn Herbicides Still Work? - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

With this dry weather the past few weeks, I have been asked if the soil-applied herbicides are going to work now that we have gotten the rain. With the exception of Prowl, most soil-applied corn herbicides do not readily break down due to sunlight (photodegrade) or volatilize. If the rain gets the atrazine to the root system of the broadleaf weeds, it will control them. But for grass weeds, the herbicide has to be taken up by the shoot as it emerges from the soil. So they can still have an impact as long as the weeds haven’t already emerged. The rain will activate the herbicide so it will control later emerging grasses. Those grasses that have already emerged will have to be controlled with cultivation or a postemergence herbicide such as Basis Gold or Accent.

Postemergence Options for Sweet Corn - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

There are few options for postemergence weed control in sweet corn, and timing is critical. Do not wait to check your fields for weeds. Broadleaf options include Basagran, Aim, or 2,4-D. These will not control grass species. These herbicides are not impacted by the type of soil insecticide that was applied. Aim is relatively new, and is labeled for a few species including nightshade (4”), lambsquarters (3”), morningglory (3 leaves), and velvetleaf (18”). In addition, Aim will suppress small (less than 4”) cocklebur, jimsonweed, pigweed, ragweed, smartweed, and prickly sida. Basagran, on the other hand, would be better than Aim for control of cocklebur, jimsonweed, smartweed, tropic croton, prickly sida, and nutsedge. Basagran will not control nightshade or pigweed.

UPCOMING MEETINGS:

Pesticide Applicator Training Session & Exam
June 26 - 27, 2001
Delaware Department of Agriculture (302-739-4811)
on Rt 13 south of Dover.

Day 1: training 8:30 a.m.-4:00 p.m.
Day 2: training 8:30 a.m.-Noon
Day 2: Exam starts at 1:00 p.m.
Bring your calculator for the calibration questions.

Weather Summary
Week of May 17 to May 23, 2001

Rainfall:
May 17: 0.01 inches: May 17
May 19: 0.33 inches: May 19
May 20: 0.01 inches: May 20
May 21: 0.35 inches: May 21
May 22: 0.97 inches: May 22

None.

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

Air Temperature:
Highs Ranged from 80°F on May 22 to 61°F on May 17.
Lows Ranged from 65°F on May 22 to 51°F on May 17.

Soil Temperature:
66°F average for the week.
(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
Extension Associate - Vegetable Crops

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