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

Cabbage.
Continue to sample fields for diamondback, cabbage looper, fall armyworm and beet armyworm. A treatment should be considered if you find 5% of the plants infested and before larvae move into the hearts of the plants.

Lima Beans.
Lima beans continue to be attractive to corn earworm moths. A treatment will be needed if you find one corn earworm larvae per 6 ft of row. Be sure to watch for soybean loopers as well - Lannate at 2.5-3pt/A will be needed to achieve soybean looper control.

Peppers.
Be sure to maintain a 5-7 day spray schedule for corn borer, corn earworm, beet armyworm and fall armyworm control. You should also continue to watch for aphid explosions.

Snap Beans.
Continue to spray snap beans from the bud stage through harvest for corn borer and corn earworm control. We have also heard reports of beet armyworm in a few fields.

Spinach.
We can now find economic levels of webworms and beet armyworm in spinach fields. As a general guideline, controls should be applied when 5% of the plants are infested with small worms and before they have moved deep into the hearts of the plants. Also, remember that both insects can produce webbing on the plants. Since beet armyworms are more difficult to control, chemical selection is important. Confirm, Intrepid or Spintor will be needed for beet armyworm control. If webworms are the predominant species, permethrin, Confirm (8 oz/acre), or Intrepid (8-10 oz) should be used. Generally, at least 2 applications are needed to achieve control of webworms and beet armyworm.

You should also watch for an increase in aphid populations. Although still spotty, aphid populations are starting to increase in some fields. A combination of the cooler summer temperatures and a switch to a warm dry fall can result in population explosions. Since there is a zero tolerance for aphids in both processing and fresh market spinach, treatments should be applied before populations explode. Assail, dimethoate, Fulfill and Provado are labeled for aphid control in spinach. With aphid control, good coverage is essential. Although the addition of a spray adjuvant (not a sticker) can help to improve control with translaminar products (i.e. Assail, Fulfill and Provado), you will also need to watch for phytotoxicity and only use products that you know have not caused leaf burning in the past. The addition of a penetrating surfactant is recommended with Fulfill. Remember to check the label for days to harvest after the last application. NOTE -- After this
fall, all new labels of dimethoate (starting as early as February 2005) will no longer have spinach on the label. Information from EPA indicates that there should be existing stocks of dimethoate available for use on spinach for the 2005 season. However, this could change so be sure to read labels carefully before applying.

Sweet Corn.
All fresh market silking sweet corn should be sprayed on a 2-3 day schedule.

Vegetable Crop Diseases - Bob Mulrooney,
Extension Plant Pathologist, bobmul@udel.edu

Lima Beans.
Downy mildew continues to be found on C-Elite Select and now on Cypress. Preventative applications of Ridomil Gold/Copper, fixed copper or Phostrol are suggested. If downy is nearby or in the field Ridomil Gold/Copper followed by fixed copper 7 days later is suggested to protect the healthy plants. The weather as well as the amount of dew has been very favorable for infection to occur. Race F of the downy mildew fungus, Phytophthora phaseoli seems to predominate as it did in 2003.

Field Crops

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

Soybeans.
At this time, the only fields that might still be at risk from soybean aphid damage are any very late double crop fields in the R1 to R3-R4 stage. Thresholds remain at 250/plant if plants are in the R1 to R3-4 stages. At this point, most of our double crop fields are in the R5 - R6 stages so it is unlikely that many fields will need a treatment. In most cases, fields will move quickly from the R5 to R6 stage. Ames Herbert from VPI called a few entomologists in the Midwest to get more information on late treatments. As it turns out, we seem to have had more aphid pressure this year than the Midwestern states, a reverse of what has been happening over the past several years. They say, at best a late season (R5-R6) spray would have about a 50:50 chance of offsetting the application cost, especially if you consider the damage to driving through a field, or the added expense of aerial application. With a preferred developmental temperature in the low 80s, conditions may be ideal for aphid reproduction for another few weeks. However, the good news is that beans are quickly maturing, and lady beetle populations are increasing.

Small Grains.
As in most years, we all know that it is difficult to predict what will happen with insect populations. Cooler summer temperatures with adequate rainfall followed by a warm, dry fall are conditions that favor aphid development in small grains, especially in early planted fields. With the early corn harvest, more fields may be planted early and these fields could be susceptible to attack. Factors that increase the potential of a return from applying an insecticide to control aphids and to reduce barley yellow dwarf virus (BYDV) infection in wheat include: (1) normal-cool summer temperatures with adequate rainfall; (2) intensive wheat management including high fertility; (3) use of BYDV susceptible varieties; (4) planting before the Hessian fly free date; and (5) a late, warm fall. We are still using a threshold for fall treatment for aphids (except greenbug) of 15-25 aphids per foot of row in combination with a known history of BYDV. In states to our south where BYDV is more prevalent, they are using thresholds as low as 3 per foot of row or in some cases do not feel comfortable with any threshold.

Direct damage from greenbug aphid has also been an issue in recent years. If you are able to scout, be sure you plan to sample your fields at emergence. Although we do not have any thresholds developed in our area for greenbug, thresholds from Arkansas say a treatment will be needed in the fall if you find 10 aphids per foot of row. This aphid is a very difficult one to control. Foliar materials labeled for aphid control in wheat include dimethoate, Lannate,
malathion, Mustang MAX, Penncap-M and Warrior. The materials labeled for barley include Lannate, malathion and Penncap-M. The Warrior label says 3.84 oz/acre are needed for greenbug and the Mustang label states only aids in control. Lower rates of pyrethroids can be used if the predominant aphid species is not greenbug. **Remember that these pyrethroids are only labeled on wheat.**

In the recent years, waiting to plant after the fly-free date (Oct 3 - New Castle County; Oct 8 - Kent County and Oct 10- Sussex County) has resulted in the inability to plant some fields due to the extremely wet fall. Therefore, some producers have indicated that they plan to plant as soon as possible this fall. If you are unable to scout early planted fields, then the use of a preventative seed treatment, like Gaucho or Cruiser, can provide good aphid control. Both products are labeled on wheat and barley. Cruiser must be applied by a commercial seed treater with commercial application equipment to ensure uniform seed coverage and good product performance. Information from Gustafson indicates the following about Gaucho: “Gaucho XT (applied at 3.4 fl.oz./cwt. seed) has both fungicide and insecticide combined in the formulation and is labeled for both wheat and barley. It works well in commercial and on-farm total slurry treaters (TST). A grower would dilute 1:1 or 2:1 water: product to secure good coverage. With dryer seed, one may need the extra moisture for coverage. Gaucho 480 seed-applied insecticide is also labeled for the wheat and barley market. This formulation can be combined with Raxil-based fungicide seed treatments for commercial application. Delivery is good, due to the slurry tanks and sophistication of treatment equipment in a plant. Achieving proper rate and coverage is ideal in this scenario. When one looks at the grower-applied market, proper application may not be as accurate. A TST treater can be used, but the grower must be careful in the application to achieve the proper rate and coverage to secure insect protection. The rate of application is 1 - 3 fl.oz., with 1 fl.oz. having shown excellent protection against fall aphids.”

**Field Crop Diseases - Bob Mulrooney, Extension Plant Pathologist, bobmul@udel.edu**

**Wheat.**

Be sure to plant treated seed. For loose smut and seed-born scab control, request seed treatment of Raxil/Thiram, Dividend Extreme at the 4 oz/cwt. rate, or Vitavax 200 plus LSP (thiabendazole) at 0.25 fl oz/cwt. They will perform the best for this disease combination. If you want early season powdery mildew control as well. Dividend at the 4 oz. rate will provide that. If scab is not an issue treat with Baytan 30 plus thiram or captan for early season powdery mildew, loose smut and a reduced level of control of seed born scab.

**Soybeans.**

Septoria leafspot, downy mildew, and some Frog-eye (Cercospora) leafspot are still evident on late beans. Most levels that I have seen should not limit yield in any way.

**Corn.**

Be sure to check corn fields for lodging potential by squeezing the lower nodes or pushing on the stalks. A simple way to do this is to walk through the field and, keeping your hands at chest height, push stalks 8-10 inches from vertical. If 10-15% of the stalks lodge, schedule the field for early harvest before a strong wind results in severe lodging.

**Soybean Patterns of Maturity - Richard W. Taylor, Extension Agronomist, rtaylor@udel.edu**

Many fields planted to earlier-maturing soybean varieties have either dropped their leaves or are beginning to yellow prior to dropping leaves. During this process, you may notice some unusual patterns. The yellow patterns can be the result of stress conditions (Photo 1) that may cause the plants to begin to shut-down prematurely (often on the sandy ridges or along field edges especially where tree roots invade the field soil). In other cases, the entire field may turn yellow except for areas of more favorable moisture conditions where plants
remain green for an extra week or more before beginning to mature (Photo 2). Regular patterns often result from a man-made situation such as planting two or more varieties in a field, mixing varieties, or planting variety strip plots (Photo 3).

The first indication that a field is approaching maturity is a change in the color of the upper most trifoliate leaf (this one is usually smaller than most of the plant’s trifoliates) from green to a bright yellow to yellow-orange (Photo 4). Shortly after seeing a speckling of small yellow leaves across the field, the entire field will quickly turn yellow and then gradually drop individual leaflets as the crop approaches maturity. When most of the leaves have fallen from the plant, you should notice changes in pod color as the plant approaches maturity. Once 95 percent of the pods have reached their mature pod color, it takes about 10 to 14 days for the crop to dry to harvest moisture although the exact timing will depend on environmental conditions.

Photo 1. Pattern of soybean leaf yellowing/leaf drop caused by stress conditions. Photo by R. Taylor

Photo 2. Pattern of soybean leaf yellowing/leaf drop caused by soil conditions. Photo by R. Taylor

Photo 3. Man-made pattern of soybean leaf drop related to variety selection. Photo by R. Taylor

Photo 4. Leaf yellowing with maturity often begins with the smaller upper leaves on soybean plants. Photo by R. Taylor
Grain Marketing Highlights - Carl German, Extension Crops Marketing Specialist; clgerman@udel.edu

Large Crops Have Tendency to Get Larger.
Corn and soybean futures markets traded higher on Wednesday this week due primarily to the potential for crop damage that may occur from the eventual path of Hurricane Ivan. Another factor that may be playing into corn and soybean price strength this morning is the Weekly Export Sales Report that came in above trader expectations for corn and soybeans at 47.5 million bushels and 23.3 million bushels, respectively. The corn number is nearly double last week's export level and about 20 million bushels higher than the high-end of pre-report estimates. The soybean export business, which also reported above pre-report expectations, was largely done with China and this may help to alleviate some of the concerns over recent export problems.

Wheat exports were reported to be below the low end of trader expectations at 12.8 million bushels. Concerns remain over the size and quality of the spring wheat crop.

We are now into early harvest for the '04 U.S. corn and soybean crops. The technical trend for both nearby corn and soybean futures is down. Currently, we are holding resistance levels in both markets, $2.17 per bushel for Dec '04 corn and the mid-to-high $5.60's for Nov '04 soybeans. Trader attention for today is likely to focus on the path of the current storm that is heading up into mainland USA from the Gulf Coast. If the storm tracks North to North East the impact to the Corn Belt could be minimal, as compared to what it could be if Ivan decides to take a more North Westerly path from Alabama. Current bidding suggests that the path of the storm is tracking away from the heartland of the Corn Belt.

General Comments.
The size of both the U.S. '04 corn and soybean crops was projected to be record and near record large in the September Crop Production report. Historical data suggests that large crops have a tendency to get larger from the September Crop report into harvest. Although weather is helping to maintain markets above resistance levels at the present time, harvest pressure is likely to take corn and soybean prices lower as harvest progress builds. Local basis bids for new crop corn and soybeans are currently 5 over Dec; and 20 under Nov for Bridgeville delivery.

Upcoming Meetings:
Twilight Workshop
Pasture and Hayfield Establishment Basics

Date: Friday, September 24, 2004
Time: 4:30 - 7:00 pm
Place: University of DE Research and Education Center Georgetown, DE
Meet at farm buildings/grove area.
Registration: Phone (302) 730-4000 if you are attending.

Many Delaware landowners are interested in establishing or renovating hayfields and pastures on their properties, but do not have experience in this area. The goal of this “see, feel, and touch” workshop is to provide basic knowledge on the practical aspects of establishing or renovating hay or pasture. We will have demonstrations of weed control practices prior to establishment, tillage (soil preparation) methods and equipment, planting techniques and equipment, and renovation techniques. Discussions will include creating good seed germination conditions, how to maximize the chance of obtaining a stand, how to set and monitor planting equipment, how to evaluate new seedlings, and goals of the planting process. If you are new to pastures or hay production, this workshop is for you.

Gordon Johnson, Agricultural Extension Agent, UD Kent County
Derby Walker, Agricultural Extension Agent, UD, Sussex County
**Pumpkin and Sweet Corn Twilight**

**Date:** Wednesday, September 29, 2004  
**Time:** 5:00 – 7:00 pm  
**Place:** Wye Research and Education Center, Queenstown, MD

Come see the 2004 Pumpkin Variety Trials and see the results of two fungicide schemes: conventional and reduced risk. See how they performed, particularly in the face of this year’s downy mildew. See how 10 different cover crop regimes affected pumpkin production. Refresh your pumpkin disease identification skills.

Exciting new sweet corn possibilities too! See the new fresh market BT sweet corn hybrids and hear results of a variety trial looking at husk characteristics for resisting sap beetles.

***A light fare will be provided***

For information call (410) 313-2707 (Maryland Cooperative Extension, Howard County) or (410) 827-8056 x 115 (WREC)

Pre-registration is not necessary.

If you need special assistance to participate in this program, please contact Mrs. Carolyn Kulp at (410) 313-2707 by September 15.

---

**Weather Summary**

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

**Week of September 10 to September 16, 2004**

<table>
<thead>
<tr>
<th>Rainfall:</th>
<th>0.42 inches: September 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readings taken for the previous 24 hours at 8 a.m.</td>
<td></td>
</tr>
</tbody>
</table>