Vegetables

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

**Peppers.**
In most areas, sprays can be applied on a 7-day schedule except in the Dover and Wyoming areas where sprays are needed on a 5-day schedule.

**Lima Beans.**
Corn earworm egg laying, larval counts and pod damage continues to be found. However, with the decrease in moth activity in most areas, we should see a decrease in earworm populations.

**Snap Beans.**
Corn borer and corn earworm moths continue to be found laying eggs in snap bean fields. Processing snap beans should still be sprayed at the bud stage for corn borer control and at the pin stage for corn earworm and corn borer control. After the pin spray, sprays are needed on a 5-day schedule until harvest except in the Dover and Wyoming areas where a 4-day schedule is needed.

**Spinach.**
Continue to watch for webworms and beet armyworm in spinach fields throughout the state. We can now find both webworms and beet armyworms.

**Sweet Corn.**
All fresh market silking sweet corn should be sprayed on a 3-day for corn earworm, corn borer and fall armyworm control.

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

**Lima beans.**
Downy mildew continues to be seen on susceptible varieties. Protect crops with 2 lbs/A of copper hydroxide (Kocide 2000, Champ DF). Weekly applications will be necessary to provide control. In most cases, adding a spreader sticker is suggested unless the label warns against it.

**Weather conditions have been very favorable for infection, which makes control more difficult.**
**Pumpkins and Winter Squash**

Downy mildew is severe in unsprayed fields at the present time. Infected leaves are completely necrotic (dead and brown) and hang limp from upright petioles. Entire fields are infected. For fields that still have green leaves and fruit are not mature, maintain sprays of Bravo + Nova + a copper fungicide alternated with Quadris + a copper fungicide every 7-10 days for control of powdery and downy mildew and Phytophthora fruit rot. Once pumpkins are mature, they should be removed from the field and placed under cover (shed, building, etc.) to minimize infection from Phytophthora fruit rot. This is important for those that have been growing cucurbits in the same fields or have seen Phytophthora in the past. A pumpkin is mature when the orange color is present and the rind is hard. If the rind slips when passing your fingernails along the ribs, then it is still immature and should not be harvested. (S.A. Johnston, Rutgers Coop Ext.).

I have also seen PRSV (papaya ringspot virus) the old WMV 2 virus that is very common now. Mottling and strapping of leaves is the most common symptom. If infection occurs early, fruit stay green or have dark green sectors. Plant away from other cucurbits and control aphids that vector the virus.

**Spinach.**

I have mentioned before using Ridomil Gold or UltraFlourish as a soil treatment after seeding for white rust and damping-off control. Keep looking for white rust. If you see white rust, apply Quadris at the 9.2-12.4 fl. oz/A rate and repeat every 7-10 days. Do not apply more than three applications in a row. This section 18 registration is still in effect from the spring and expires November 30, 2000.

**Field Crops**

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

**Small Grains.**

As you make plans to plant wheat, be sure to use a combination of cultural practices for Hessian fly management. Since there are no cost-effective chemical controls for Hessian fly, a combination of the following cultural practices should be used: (1) Complete plowing of infested wheat stubble soon after harvest, (2) Crop rotation (do not plant wheat in the same field 2 years in a row), (3) Eliminate volunteer wheat before planting to prevent early egg laying, (4) Do not use wheat as a fall cover crop near fields with infestations, (5) Plant after the fly free date (Oct 3 – New Castle County; Oct 8 – Kent County; Oct 10 – Sussex County) and (6) Plant resistant varieties – At the present time, we do not have local varieties resistant to Biotype L – the main biotype of hessian fly found in our area. However, the variety Roane has exhibited lower levels of lodging and good yield ratings in the University of Delaware's Small Grain Variety trials. There are also 2 Pioneer varieties from the south that now have resistance to Biotype L which we will evaluate this season.

**Soybeans.**

Earworm moth catches have started to decline and we have not seen any increase in earworm larvae. Although we still can find an occasional worm, we have not seen economic levels. It appears that the weather has played a significant role in reducing populations and diseases have keep earworms under control. If you have not found larvae at this point, it is unlikely that we will see economic levels.

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

**Wheat.**

With all the rain we have had, I get questions about treating wheat seed for Pythium damping-off. Pythium can reduce stands in wet fields or wet areas of fields. Under normal conditions this has not been an issue for us in Delaware. Last fall
there was lots of rain from the hurricane and a few stands were reduced by Pythium. Normally, thiram will provide some control but some fungicides that target this group of fungi such as Apron or Allegiance (metalaxyl) may be needed. Raxil XT is a combination of Raxil and Allegiance. Talk to your seedsman to see if you can get this treatment if you think you are at risk from Pythium damping-off. For most situations, Baytan-thiram or Raxil-thiram are suggested. Baytan is recommended for treating varieties that are susceptible to powdery mildew. Both products control loose smut.

**Soybeans.**

Have you seen soybeans with these symptoms?

We may have identified a new disease of soybeans that has been seen in Delaware and Maryland for the first time this season. The disease is Sudden Death Syndrome or SDS. Two fields, one each in Delaware and Maryland, have been observed with symptoms of SDS and the fungus that causes the disease has been isolated from infected taproots. We are now in the process of determining if the fungi we have are capable of producing SDS symptoms on young soybean plants. Once that is done, we will be able to confirm that SDS is truly here on the Delmarva Peninsula. In the meantime, we want to know if it is present in any other fields. If you have plants with these symptoms please contact your county Extension agent. We would like to get samples of 5-10 plants that are showing the symptoms. In addition to the leaf symptoms pictured here (courtesy of Ted Haas from Maryland) yellowing tends to be worse at the top of the plant. Eventually the yellow tissue dies and turns brown and the only green tissue is along the major veins. Severely infected leaflets fall leaving only the petioles (leaf stalks) sticking up. Plants with leaf symptoms exhibit a gray to reddish brown discoloration beginning near the pith and radiating out into the vascular tissue and may extend several nodes above the taproot, with the pith remaining white. Plants with severe leaf symptoms have severe stem and root discoloration especially in the taproot and lateral roots. Root volume is reduced. Plants can die prematurely and severely infected plants are easily pulled from the soil.

The disease is caused by a slow growing strain of Fusarium solani that produces a blue pigment. The fungus has been renamed *Fusarium solani f.sp. glycines*. The fungus is soilborne and the pathogenic strains have probably been here, but we have not had the right combination of favorable environment and susceptible varieties to produce the symptoms. SDS is a problem in the areas where it is found when the seasons are wetter and cooler than normal. Yield losses can be substantial depending on when symptoms appear in relation to flowering and pod fill. It is managed by the use of resistant varieties and agronomic practices that I will elaborate on further, if we confirm that what we have seen is SDS.

**Note:** Two other diseases can produce leaf symptoms that are similar to SDS, but the whole range of symptoms on leaves and roots need to be present as well as the fungus to confirm Sudden Death Syndrome. If you see plants with these symptoms, contact your county agent: New Castle 302-831-2506, Kent 302-697-4000, Sussex 302-856-7303.
Grain Marketing Highlights - Carl German, Extension Crops Marketing Specialist; clgerman@udel.edu

Record U.S. Corn and Soybean Harvest Predicted
USDA's September 12th Crop Report estimated record production for the 2000 corn and soybean crops. This came as no surprise to most commodity traders with the exception that the USDA estimates were slightly higher than pre-report average trade estimates. The nation's corn harvest was projected at 10.362 billion bushels, a 7 million bushel decrease from last month's report. The nation's soybean harvest was estimated at 2.9 billion bushels, representing an 89 million bushel decrease in the production forecast from the August report. U.S. wheat production was estimated at 2.302 billion bushels, a 39 million bushel increase from the August report.

Ending stocks for both corn and soybeans declined from the August estimates, remaining well above year ago levels. The corn carry estimate was placed at 2.242 billion bushels, down from the August estimate of 2.389 billion bushels and 47 million bushels larger than last year's carry-out. Ending stocks for U.S. beans were reduced 100 million bushels from the August report and are now estimated to be 365 million bushels, representing a 100 million bushel increase from last year's carry out of 265 million bushels.

Harvest Marketing Strategy
Even with a looming record U.S. corn and soybean harvest and a potentially record harvest on the shore, early harvested corn and beans are likely to command premium basis offerings and therefore should be taken, in the form of early harvest cash sales. For grain that is unpriced and harvested later, basis levels are likely to weaken, with rumors of the local basis reaching record historical lows. When that happens individuals will need to decide upon the course of action that best suits their needs. Those that have storage are likely to store unpriced grain when price offerings are weakest. For those that do not have storage and must sell cash corn and soybeans at harvest buying call options may offer some opportunity to gain staying power in the market. The option strategy will depend upon the price level of the underlying commodity and the cost of the premium. Purchasing call options will present their best opportunity when the harvest price and option premium costs are at their lowest levels for at the money strike price(s). For Technical Assistance on Grain Marketing Decisions contact: Carl German at 302-831-1317 or clgerman@udel.edu.

ALS-Resistant Pigweed - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

There are fields in Delaware where Pursuit herbicide was not effective in killing the pigweed. These fields have a history of vegetable production and repeated use of Pursuit. Seeds from these fields have been tested and are resistant to Pursuit herbicide as well as all the other common ALS-inhibiting herbicides used in corn and soybeans (Pinnacle, Classic, Beacon, Accent, and Raptor). Also, pigweed from fields in southeastern Pennsylvania are showing the same pattern of resistance to all the common ALS-inhibiting herbicides. An indication of resistance is that only one weed species is present in the field; the weeds emerged months ago; and the herbicides you used typically control this species.

Resistance is a man-made problem from over-use of herbicides with the same site of action in the plant. Man further compounds the problem by spreading the seeds across fields and into previously uninfested fields. Once a field becomes infested with an herbicide-resistant species it will limit your weed control options for many years to come. Harvesting equipment is one of the big culprits of spreading weed seed. If you suspect a field has resistant weeds in it, be sure to clean your equipment thoroughly before moving to the next field. This means using an air hose or
power washer to clean the equipment; just letting the combine run in the field is not going to be adequate. The time it takes to clean equipment at harvest is going to save many years of headaches in the future.

Upcoming Events…

Pumpkin Twilight Meeting

Date: September 21, 2000
Time: 4:30 p.m. Plots available for viewing
      5:30 p.m. Comments from the Pumpkin Team
Location: University of Maryland’s Wye Research & Education Center, Queenstown, Maryland
For More Information: Contact Bob Rouse at 410-827-8056 or rr36@umail.umd.edu

Attention Farmers, Land Managers, Extension Agents, Agency Personnel, Educators, and All Those Interested in Alternative Crops.

Field Day and Open House Announcements

Re-introduction of the Chestnut as an Alternative Crop For Delmarva.
Growing Chestnuts as a Nut Crop for Profit.

Field Day 1: Educating Growers on Producing Chestnuts as a Nut Crop for Profit - A field day for extension agents and specialists, agency personnel, educators, land managers, and all those interested in teaching about alternative crops.

Day/Date: Thursday, September 21, 2000
Time: 3:30 PM to Dusk
Place: University of Delaware, Research & Education Center, Rt. 9, Georgetown, 5 miles West of Rt 113, On-Farm
Location: Chestnut Planting, UDREC main farm (signs will be posted).
Registration: Register by phoning (302) 697-4000 by September 19.

A blight earlier in this century all but eliminated the American chestnut from eastern woods and forests and with it, chestnuts as a common food on American tables. With the development of blight resistant chestnut hybrids we can now grow chestnuts successfully again.

The University of Delaware Cooperative Extension with support from Northeast SARE is sponsoring 2 field days on the re-introduction of the chestnut as an alternative crop for Delmarva. This first event will focus on the growing of chestnuts as a nut crop for profit and how to educate potential growers on production practices.

Five years ago, a planting of 120 hybrid chestnut trees were planted at the UD Research Station near Georgetown. Those trees are now near commercial production levels.

We are inviting all those interested in learning more about chestnuts as a crop and how to educate growers on production practices to this field day. We have invited chestnut growers, research, marketing, and extension personnel working with chestnuts as guest speakers. There will be a tour of the orchard as well as samples of chestnut products and cuisine.

Program:

1) The Chestnut planting at the REC, Georgetown - goals and results. Gordon Johnson, Extension Ag, Agent
2) The Chestnut industry in Michigan. Dunstan chestnuts in the East. Dr Dennis Fullbright, Dept. of Botany and Plant Pathology, Univ. of Michigan.
3) Marketing Chestnuts. Gerald Berney, Agricultural Marketing Service, USDA
4) Chestnut Production -- A Growers Perspective. Nancy and Gary Petitt, Townsend, DE
5) Tour of Chestnut Planting - Chestnut biology, production, and management considerations -- experts and growers.
6) Harvesting, Handling, and Utilization - expert and grower panel
7) Samples of chestnut products and cuisine

Phone (302) 697-4000 in advance to register.

Field Day 2: Commercial Scale Chestnut Production - Open House and Orchard Tour
The second event will be a field day and open house at Delmarvelous Chestnuts, a new commercial chestnut orchard near Townsend DE operated by Nancy and Gary Petitt. More information will follow.

**Day/Date:** Saturday, October 7, 2000  
**Time:** 3:00 PM to Dusk  
**Place:** Delmarvelous Chestnuts, Orchard of Nancy and Gary Petitt, 648 Oak Hill School Road, Townsend, DE  
**Directions:** Call (302) 697-4000 or (302) 659-1731 for directions.  
**Registration:** Register by phoning (302) 697-4000 by October 4.

**Hay and Pasture Workshop: Basic Considerations for Establishing and Maintaining a Grass Hay Field or Pasture**  
*Carl Davis, Extension Agricultural Agent, University of Delaware, cpdavis@udel.edu*

**Date:** Saturday, September 23, 2000  
**Time:** 10:00 a.m. – 12:00 noon.  
**Location:** University of Delaware Farm, Rt. 896, Newark, DE  
**Registration:** Phone 302-831-2506 by Wednesday, September 20 if you plan to attend. This will help us plan for handouts, etc.  
**Directions:** From 896 (S. College Ave.), enter UD Farm from north entrance to Townsend Hall (at traffic light closest to bridge over railroad and directly across from Chrysler Parts Depot). Make an immediate left at first “Stop” sign. Road curves to the right as it passes Girl Scout Headquarters (on left) and then passes several farm buildings. Continue straight on gravel road approximately 500 yds. Hay and pasture demonstration plots will be on your right (inside wire fence).

**Purpose:** If you are managing an existing grass hay field or pasture, or are considering establishment or renovation and need help with the basics, this workshop is for you.

**Topics:** Identification and characteristics of various grass species, basic considerations for maintenance and establishment (soil test, liming, fertilization, weed control), and planting methods and timing (spring vs. fall). There will also be a brief comment on the new Delaware Nutrient Management Program.

We hope that this will be the first of a series of helpful and informative meetings on hay and pastures. We look forward to your participation and input on future program topics and needs. As we are just beginning to develop a mailing list for this programming, please share this information with your interested friends.

This meeting is free and everyone interested in attending is welcome. For more information or for special consideration in accessing this meeting, please contact Carl Davis at 302-831-2506 or cpdavis@udel.edu

### Weather Summary

<table>
<thead>
<tr>
<th>Rainfall:</th>
<th>None.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readings taken for the previous 24 hours at 8 a.m.</strong></td>
<td></td>
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<tr>
<td><strong>Air Temperature:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Highs Ranged from 85°F on September 12 to 73°F on September 7.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lows Ranged from 63°F on September 12 to 50°F on September 8.</strong></td>
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<tr>
<td><strong>Soil Temperature:</strong></td>
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<tr>
<td>75°F average for the week.</td>
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<tr>
<td>(Soil temperature taken at a 2 inch depth, under sod)</td>
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<tr>
<td>Web Address for the U of D Research &amp; Education Center:</td>
<td><a href="http://www.rec.udel.edu">http://www.rec.udel.edu</a></td>
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</tbody>
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**Compiled and Edited By:**

*Tracy Wootten*  
Extension Associate - Vegetable Crops

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