Vegetables

Lima Beans.
Seedling plants should be sampled for leafhoppers. A treatment is needed if you find 5 leafhoppers per sweep. If plants are small, dimethoate will provide the most cost effective control. As soon as the earliest planted fields begin to flower, fields should be sampled for lygus bugs and stinkbugs. Treatment should be considered if you find 15 adults and/or nymphs per 50 sweeps. Lannate should be used if both species are present.

Peppers.
Corn borer trap catches are low due to the recent cool weather. We should start to see an increase in corn borer moth activity by next week. BLT catches are updated three times per week on our website: http://www.udel.edu/IPM/latestblt.html. Although corn borer catches are currently low, controls are needed on all plantings where fruit is ½-inch in size or larger. If Orthene or Address are used, they can be applied on a 10-day schedule. If Ambush, Baythroid, Lannate, Pounce or Spintor are used, they should be applied on a 7-day schedule. You will need to combine dimethoate with the previous products for pepper maggot control.

Potatoes.
Corn borer catches are extremely low – less than one per night in all locations. No corn borer controls will be needed until we see an increase in moth activity. In most cases, first generation corn borer activity was light and larvae are already in the stems. In fields where Provado and Spintor have been used for CPB control, populations are light with only an occasional adult or large larvae being found. In fields where Admire was used at planting, we are starting to see the first small larvae. Treatment will be needed when you find 4 small larvae per plant or 1.5 large larvae per plant. The threshold should be reduced by half if both stages are present. Provado should not be used following Admire to avoid the development of resistance. Spintor or Agri-Mek should be applied. Spintor has provided control of small and large larvae. Agri-Mek is most effective when larvae are small. Green peach aphid populations remain light but you should watch for increases in populations once the weather turns warm again. At this time, the treatment threshold for all fields is four aphids per leaf. Although we have never seen aphid outbreaks where Admire was used at planting, Fulfill or Monitor should be used if aphids increase above the economic threshold level. In all other fields, Fulfill, Provado or Monitor can be used.

Snap Beans.
Continue to watch for thrips and leafhoppers in seedling beans. A treatment is needed if you find 5-6 thrips per leaflet or 5 leafhoppers per sweep. If
both insects are present, the threshold of each should be reduced by 1/4 the level for each insect. If plants are small and no buds are present, dimethoate will provide cost-effective control of both insects. If buds or pin pods are present on fresh market or processing snap beans, they should be sprayed for corn borer control. Orthene or Address (both acephate) should be used at the bud and pin stages on processing beans. If leafhoppers and thrips are also present, acephate will also control these insects. Once pins are present on fresh market snap beans, a 7-day schedule should be maintained for corn borer. Lannate or Capture should be used. BLT catches are updated three times per week on our website: http://www.udel.edu/IPM/latestblt.html.

**Sweet Corn.**

In most areas of the state, fresh market silking sweet corn should be sprayed on a 3-4 day silk spray schedule. Low levels of corn earworm can be found feeding in pre-tassel stage sweet corn. These fields should be sprayed at tassel emergence and again in 3-4 days. At this time, the majority of the first generation corn borers have tunneled into the stalk or midribs of the leaves. Corn borer trap catches are low due to the recent cool weather. We should start to see an increase in corn borer moth activity by next week. BLT catches are updated three times per week on our website: http://www.udel.edu/IPM/latestblt.html.

**Watermelons.**

We are still finding field with economic levels of spider mites. If you have sprayed for mites and need a second or third application, it is important to consider using an insecticide with a different mode of action to reduce the chances of developing insecticide resistance. In addition, sprays will need to be applied 5-7 days apart if population levels are high at the time of treatment and numerous eggs are present. Recent applications of Kelthane have provided good control for one week after application. Since Agri-Mek is a translaminar product, it should not be used with any adjuvants or fungicides that bind the material tightly to the leaves and prevents movement into the leaves. Capture or Danitol (both pyrethroids) have also provided effective control. Melon aphid populations are spotty but continue to increase. Controls are needed if 10 to 20 percent of the plants are infested and you see leaf curling. Lannate or Thiodan are the labeled materials and have provided fair to good control.

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**Late Blight Update - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu**

**Disease Severity Value (DSV) Accumulations as of June 14, 2000 are as follows:**

*Remember that 18 DSV’s is the threshold to begin a spray program*

<table>
<thead>
<tr>
<th>Emergence Date</th>
<th>DSV’s</th>
<th>Recommendation</th>
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<tr>
<td>April 14</td>
<td>114</td>
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<td>April 21</td>
<td>87</td>
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<td>April 27</td>
<td>72</td>
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<tr>
<td>May 24</td>
<td>27</td>
<td>5-day, low rate</td>
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**Accumulated 15 DSV’s since the last report.** Conditions are favorable for late blight.

More DVS’s will accumulate today. If it has been 7 days since the last spray, take advantage of the first opportunity to protect the plants. The spray recommendation for emergence dates of April 14,
21, and 27 takes into consideration control of early blight as well.

**Vegetable Fungicide Update** - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Rohm and Haas announced recently that Nova 40W has received a supplemental label that includes several vegetable crops that are important in Delaware. We have had a Section 18 registration for the use of Nova to control powdery mildew on cucurbits for the past two years. Full labeling includes powdery mildew on all cucurbits, rust on asparagus, rust and pod tip rot (Rhizoctonia) on snap beans, and powdery mildew on field- grown tomatoes. Nova is an excellent powdery mildew and rust fungicide and is a welcomed addition to our line-up of crop protection fungicides. Nova has been registered on fruit in Delaware for some time.

**Agtral International** has introduced a new fungicide Fluranil; has expanded the UltraFlourish label and added a new formulation of Champ. Fluranil is a combination of mefanoxam, which is the active ingredient in UltraFlourish and Ridomil Gold, and chlorothalonil, which is the active ingredient in Bravo. It is labeled for control of certain diseases on cucurbits, potatoes, and leafy vegetables.

Leafy vegetables and potatoes have been added to the label of UltraFlourish. This label change for potatoes is for pink rot and leak. Apply up to 0.84 fl oz/1,000 linear ft over the seed pieces prior to row closure. Remember that UltraFlourish is a 2-lb/ gal product while Ridomil Gold contains 4 lb of mefanoxam/gal.

**Champ DP** (Dry Prill) 57.6% copper hydroxide, 37.5% metallic copper equivalent is a new formulation of Champ, which has been available as a flowable copper hydroxide.

Growers should be aware that the new Quadris label from Zeneca Ag Products has limited the number of applications of strobulurin fungicides on several crops of interest to Delaware growers. These changes reflect the companies desire to prevent resistance from occurring in the target fungi. Applications to cucurbits is limited to 4, potatoes 6 (same as last year), tomatoes 5. See the label for more information. Plan your fungicide rotations accordingly.

**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 Phil Shields at (410) 742-8788 or e-mail: ps136@umail.umd.edu

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The first fungicide spray should be applied 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 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 0 and start over. The first and last day listed above can be partial days so use the larger EFI value of this report and other reports for any specific day.

If, for some reason, a serious disease outbreak occurs in your field, return to a weekly spray schedule.

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

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**Field Crops**

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

**Alfalfa.**
Since fields are in various stages of regrowth, be sure to watch all fields closely for potato leafhoppers. Leafhopper adults and nymphs have increased above threshold levels in many fields. If economic levels are present and you plan to cut within 4-5 days, cutting will be a control option for leafhoppers. Be sure to check fields within a week of harvest for leafhoppers feeding on the regrowth. If you are unable to cut and threshold levels are present, a short residual insecticide should be used. The following treatment thresholds should be used for potato leafhopper management in alfalfa (numbers are expressed as leafhoppers per 100 sweeps): 3-inch or < alfalfa – 20; 4-6-inch alfalfa – 50; 7-11-inch alfalfa – 100; > 11 inches tall – 150. Ambush, Baythroid, Dimethoate, Pounce or Warrior will provide cost effective control.

**Grasshoppers.**
Grasshopper populations continue to increase, especially in sorghum, along edges of field corn fields, and in soybeans planted into barley stubble. As a general guideline, non-crop areas should be treated if you find 20 or more grasshoppers per square yard. In corn and sorghum, a treatment is justified if you find 5-8 grasshoppers per square yard. In soybeans, the threshold is one per sweep and 30 percent defoliation. Sevin and Warrior are labeled on all three crops and have provided the most consistent control. Dimethoate is labeled but must be applied when grasshoppers are small to get effective control.

**Field Corn.**
Although armyworm activity is over in most wheat and barley fields, large larvae have been found moving into field corn. Although most of the movement has already occurred, be sure to check corn fields next to wheat and barley fields one last time for armyworms. Controls will be needed if 25% of the plants are infested and worms are one-inch long or less in size. A pyrethroid will provide the best control.

**Soybeans.**
We can continue to see an increase in spider mite activity, especially on soybeans with just unifoliate leaves. Continue to monitor field interiors as well as field edges for spider mites. 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% of plants with 1/3 or more leaf area damaged. Since we do not have any good miticides available for mite control in soybeans, early detection and application of control materials is critical. If dimethoate is used, high storage temperatures (greater than 95 degrees F) can reduce the effectiveness and it is very susceptible to degradation if the pH and/or iron content of the spray water are high. Buffering
agents can be added to the mix to adjust for high pH and iron content. The buffering agent should be added to the spray tank before dimethoate is added. The addition of a penetrant like LI-700 has been shown to improve the performance of dimethoate. We have again submitted for a Section 18 for Danitol for spider mite control. We will keep you informed on the progress of this request. Mexican bean beetle and bean leaf beetle activity are still active; however, no treatments are needed before bloom unless you find 35% defoliation or the stand is being reduced below the desired level for the row spacing.

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

Wheat.
Leaf rust is increasing in severity on susceptible varieties in the northern part of the state. The good news is that most of the wheat is far enough along for the rust to not affect yield. Tilt at 4 oz and Quadris at 6.2 fl. oz at head emergence is controlling rust and Septoria very well in plots near Middletown on ‘Jackson’ wheat. Septoria leafspot is appearing late on fields in New Castle County. These spots are caused by Septoria nodorum, which also causes glume blotch. Brown, discolored heads may be infected with glume blotch. The recent wet, drizzly weather will favor glume blotch development. I had seen some speckled leaf spot earlier in the season caused by Septoria tritici. Unfortunately some scab is showing up now in some fields. Look for straw colored heads with no, or very shriveled, mold-covered kernels. With the recent rain, pink discoloration of the heads may be seen as well. I have not seen much take-all this season, but a sample was submitted recently with take-all. Look for the blackened lower stem at the soil line. Remove the leaf sheath and the stem is black or has black streaks. Root development is very limited and the plants can be pulled easily from the soil. Plants are usually stunted and many have blank straw colored heads. It usually appears in irregular patches in the field. Rotation away from small grains for a year is usually sufficient to avoid take-all in the future.

Soybeans.
Pythium damping-off may be a problem especially in no-till fields when soybeans were trying to emerge during the cool, wet weather. Too late for treatment now, but seed treatments containing Apron are suggested when Pythium damping-off is a problem.

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

U.S. Corn and Soybean Crops Not Out of the Woods Yet
The 6 to 10 day NOAA weather forecast calls for above normal temperatures and normal precipitation amounts in the Corn Belt this week. Recent rains have visited portions of the Corn Belt, helping to keep a thirsty growing U.S. corn crop developing. Prices for commodities in Chicago have potentially over reacted to the recent fronts moving across the Midwest, with many contracts moving to new lows. A return to hot weather will zap the moisture that is available to this crop and that is likely to put the bulls back in charge of commodities bidding. Even though many are now wishing that we had been more aggressive in making corn, soybean, and wheat
sales for the 2000 crop, it is this analyst’s opinion that pricing opportunities will re-emerge. That friendly feeling toward the market is based upon a couple of things. First, if one looks at the U.S. Drought Monitor, located on the Internet at (http://enso.unl.edu/monitor/monitor.html), it is easily seen that a large portion of the corn belt throughout Indiana, Illinois, Iowa, and Nebraska is experiencing drought conditions rated anywhere from drought - abnormally dry, drought - first stage, drought - severe, to drought extreme. This means that when the hot weather hits it will take at least an inch of rain a week to bring the corn and soybean crops to maturity. Another positive price factor currently entering the market is reported weather problems developing in China.

Weather conditions during the next thirty days in the central Corn Belt will have a significant impact upon commodity prices. If timely rains do not occur then we will have forward pricing opportunities returning to the commodities markets. If timely rains continue to occur then the 2000 marketing year will be one in which we end up farming for the loan rate(s): $2.10 per bushel locally for corn, $5.36 for soybeans, and $2.67 per bushel for wheat.

Managing Summer Pastures - Richard W. Taylor, Extension Agronomist; rtaylor@udel.edu; and Susan Truehart Garey, Extension Agent, Animal Science, truehart@udel.edu

Oftentimes we think that grazing and especially rotational grazing will keep our pastures in proper condition. In many ways, pastures need special attention during this time of year to ensure stand survival, maximum production potential, high quality forage, and minimal weed invasion. The following are some items you should think about when managing summer pastures:

Pasture clipping—although often thought of as only a means of controlling weed and brush invasive species, clipping also stimulates forage regrowth, influences the movement of grazing animals by removing undesirable patches of undergrazed forages, improves livestock health by removing seedheads, and can improve the pasture’s forage species mix by allowing light penetration. Pasture regrowth has a higher nutritional value than mature plants and is more palatable to the animal, resulting in higher rates of consumption. Rotary mowers work best in a pasture setting but use a mower with a duty rating appropriate for the type of job (woody species will require heavier duty mowers). If rotationally grazing a pasture, mow after the animals have been removed. Mow to a height of 3-5 inches.

Pasture dragging—often overlooked with regard to its importance, this management technique is essential if only one animal species is grazing in a pasture. Otherwise, animals will selectively graze, avoiding areas where manure lays resulting in a reduction in both pasture quality and quantity. Use a piece of chain link fence or similar object to break up manure piles and redistribute them over the entire pasture area. This action will also help redistribute nutrients across the pasture. As an added benefit, dragging will assist in reducing the internal parasite load of the pasture by exposing the parasites to the sun and destroying them.

Pasture fertilization—this is necessary after each grazing cycle to maintain pasture productivity. The early summer is an ideal time to apply half the potash and all the phosphorus called for by the soil test report. If legumes are a component of the pasture, be sure to consider adding boron at 1 to 2 lbs actual boron per acre plus sulfur if needed. The remainder of potash fertilizer should be applied in late summer to prepare the forage plants for winter.

Species diversity—if you can, consider using several animal species to graze either together or following in close succession in the grazing cycle. Multiple species maximize the use of the pasture and in many cases can boost pasture productivity. Many dairy operations have
reported improvements in milk production in grazing systems that include goats or sheep behind the cows. Goats also can be useful in controlling woody weed species or other weedy forbs. Different animal species carry different parasite loads so there should not be a concern with cross contamination.

⊗ Pasture diversity—if you have noted a decline in productivity of your pasture that is not explained by fertility or weed control or other known factors, it may be time to consider adding other plant species to your pasture using pasture renovation techniques. Especially in situations where pure grass pastures are used, the addition of an appropriate legume such as red clover or a ladino-type white clover can boost production.

⊗ Stocking rates— as conditions change through the summer, review your stocking rates and adjust as necessary. Adjustments should be made according to pasture productivity. Monitor your pastures closely during the summer months as conditions can change rather quickly. Rainfall is the number one factor affecting pasture production.

⇒ If you do not plan to bale the straw, harvest the small grain as high as feasible to minimize the amount of residue placed on the soil surface. This will aid in getting a uniform depth of seed placement.

⇒ Check out the chopper/spreader mechanism on your combine to be certain it is working well so you do not create bands of chaff or straw behind the combine that might cause planting problems.

⇒ Before you plant and while you’re planting, check out the seeding depth as you change from field to field or as soil conditions change during the day as soil and straw dry out. Surprisingly, this is often the cause of many stand problems seen a few weeks after planting.

⇒ Plant as soon after harvest as is feasible. This will maximize your yield potential and can add significant dollars to your bottom line.

⇒ Be certain that your press wheels are closing the slot and establishing good soil to seed contact so germination will be fast and uniform.

⇒ Check out weed conditions and decide if a burndown herbicide is needed at or shortly after planting.

⇒ Scout early for insect problems as the beans emerge. Grasshoppers, leaf feeding beetles, and slugs can quickly destroy emerging plants.

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Tips for No-Till Double-Crop Soybeans
Richard W. Taylor, Extension Agronomist; rtaylor@udel.edu and Derby Walker, Extension Agricultural Agent; derby@udel.edu

Recent rains offer the opportunity to do an excellent job establishing beans following barley. With luck, the good double-cropping conditions will continue for wheat. Before heading to the field there are a few items it might be good to review to ensure that you start your double-crop beans off with the highest yield potential possible.

⇒ Look over your no-till drill or planter very carefully before you get started. Is there excessive wear on the no-till coulters that might prevent them from cutting through crop residue or tilling the narrow band in which the seed will be planted? Check on the alignment of the coulters, disc openers, and packing wheels. Check chains, bearings, and lube points to be sure everything works as it was designed to do. Check the disc openers for excessive wear and freedom of movement.
Upcoming Events…

Vegetable Pest Scouting Twilight Meeting

DATE CHANGE

Date: June 27, 2000
Time: 6:00 p.m.
Location: Vince Winkler’s Farm, Kent County
For Further Information:
Contact Gordon Johnson at 302-697-4000

Weather Summary

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<td><strong>Air Temperature:</strong></td>
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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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