



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 17, Issue 9

May 15, 2009

Vegetable Crops

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

Cabbage

Continue to scout for diamondback and imported cabbageworm larvae. Economic levels of diamondback larvae can be found. A treatment should be applied when 5% of the plants are infested and before larvae move to the hearts of the plants.

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. Economic levels of aphids can be found and although beneficials (lady beetles and parasitized aphids) can also be found they are not keeping up with the aphid populations due to the cooler temperatures. As a general guideline, a treatment should be applied for aphids when 20% of the plants are infested with 5 aphids per leaf, and before significant leaf curling occurs. Economic levels of spider mites can also be found in a few fields so check carefully for mites, especially on the crown leaves. As a general guideline, the threshold for mites is 20-30% infested crowns with 1-2 mites per leaf. Although we do see some cucumber beetle feeding, in general, cucumber beetle levels have been low. However, as soon as warm weather returns this can quickly change, so be sure to watch carefully for an increase in populations.

Peppers

Fields should be sampled for thrips and corn borers. On young plants, corn borer larvae can bore into the stems and petioles. In areas where peppers are isolated or corn is growing slowly, moths are often attracted to young pepper plants. Therefore, you should watch for corn borer moths laying eggs in all fields. As a general guideline, treatment may be needed if there is no corn in the area or you are using rye strips as windbreaks. You should also look for egg masses. At this time of year, thrips can damage peppers by vectoring tomato spotted wilt virus and by causing direct plant damage. Although there are no available thresholds, a treatment may be needed if you see populations increasing.

Potatoes

Continue to sample for Colorado potato beetle adults and egg laying. A treatment should be considered for adults when you find 25 beetles per 50 plants and defoliation has reached the 10% level. Once larvae are detected, the threshold is 4 small larvae per plant or 1.5 large larvae per plant. Corn borer moth flights are still low. A corn borer spray may be needed 3-5 days after an increase in trap catches or when we reach 700-degree days (base 50). If you are scouting for infested terminals, the first treatment should be applied when 10% (fresh market) or 20-25% (processing) of the terminals are infested with small larvae.

Snap Beans

All seedling stage fields should be scouted for leafhopper and thrips activity. The thrips threshold is 5-6 per leaflet and the leafhopper

threshold is 5 per sweep. If both insects are present, the threshold for each should be reduced by $\frac{1}{3}$. Be sure to also watch for bean leaf beetle feeding. Damage appears as circular holes in leaves and we have seen significant damage in recent years on the earliest planted fields. As a general guideline, a treatment should be considered if you defoliation exceeds 20% prebloom.

Sweet Corn

Continue to sample for cutworms and flea beetles. As a general guideline, treatments should be applied if you find 3% cut plants or 10% leaf feeding. In order to get an accurate estimate of flea beetle populations, fields should be scouted mid-day when beetles are active. A treatment will be needed if 5% of the plants are infested with beetles. Be sure to also watch for corn borer larvae in the whorls of the earliest planted fields. A treatment should be applied if 15% of the plants are infested.

Potato Disease Advisory - May 13, 2009 - *Bob Mulrooney, Extension Plant Pathologist;*
bobmul@udel.edu

Late Blight Advisory

If you would like a fax or email report please call (302) 831-4865, or email bobmul@udel.edu.

We are using the E-WEATHER SERVICE from SkyBit, Inc. as we have in the past. The service determines specific requested weather parameters (temperature, relative humidity and rainfall) based on calculations of data from the nearest National Weather Service stations. This weather data is used in the WISDOM software program for predicting late blight and making spray recommendations and accumulating p-days for early blight forecasting. Our location this year is:

Location: Shadybrook Farms, Little Creek, DE (Kent County)

Greenrow: May 1

Date	DSV	Total DSV	Spray Recommendation
5/3 -5/6		41	
5/7	2	43	
5/8	1	44	
5/9- 5/13	0	44	10-day spray interval

Disease severity values accumulated very quickly during the past rainy period. The threat of late blight from seed infection is low to medium, but there was some in Maine last season. Be vigilant, given this recent weather pattern. Apply sprays of mancozeb (Dithane, Manzate, Pencozeb, Manex II), Gavel or Bravo (chlorothalonil) now and then repeat before plants canopy down the row. See the [2009 Delaware Commercial Vegetable Recommendations](#) for more information on fungicides.

Fortunately late blight has not been a problem here in Delaware for many years and unless you have seed from an unknown source the risk of late blight is low. However, the weather was perfect for it if it was present on seed.

MELCAST Disease Forecasting for Watermelons - Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.edu

The weather based forecasting program MELCAST on watermelon will begin in the next week. MELCAST is a weather-based spray scheduling program for anthracnose and gummy stem blight of watermelon. If you received a report in 2008, you should automatically receive the first report next week. If your email or fax number has changed, please call us. If you do not receive a report and would like to, please call Jeri Cook at (410) 742-8788 and give us your name and fax number or e-mail address. MELCAST also is available online - bookmark the site <http://mdvegdisease.umd.edu/forecasting/index.cfm>. Click on the watermelon picture.

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 that is applied. After a fungicide is applied, reset your counter to 0 and start over. If a spray has not been applied in 14 days, apply a fungicide, reset the counter to 0 and start over. Please call Kate Everts if you have any questions on how to use MELCAST on your crop (410) 742-8789.

Because of widespread resistance to Quadris in our area, chlorothalonil (Bravo, etc.) or Pristine *plus* chlorothalonil *alternated* with chlorothalonil is recommended when spraying according to MELCAST. If a serious disease outbreak occurs in your field, return to a weekly spray schedule.

Early Planted Processing Lima Beans-Gordon Johnson, Extension Ag Agent, Kent Co.; gcjohn@udel.edu

The earliest processing lima beans will be planted starting in the next 10 days. May planted lima beans often have a lower yield potential than June and early July plantings due to a number of factors. Soil conditions may be cold and this delays germination and reduces stands. Minimum soil temperature for best germination is 65°F. Soil borne diseases, such as Rhizoctonia and Fusarium, can become established on plant roots, especially when they are growing slowly in cold soils. This can limit the later yield potential of these early planted lima beans. Also, heavy infestations of seed corn maggot can overwhelm seed treatments in cold, wet soils reducing stands.

The major limiting factor for early lima beans is the fact that they flower and set pods during summer conditions when day and night temperatures are high. Low lima bean yields in early plantings are associated with high levels of flower and pod drop. Hot, dry weather in July and August will lead to reduced pod set and retention. Day temperatures of 90°F or above reduces pollination and pod set and night temperatures in the 70s or higher will also adversely affect yields because higher levels of carbohydrates are consumed in night respiration, limiting the plants ability to set and retain pods. Plants may reflower when cooler conditions recur, leading to split sets.

The following are some considerations for early lima bean plantings:

- Plant in fields with light soils that heat up quickly and where emergence will not be delayed. Conventional tillage is required for early plantings to speed this warming.
- Plant on a warming trend when soils are 65°F or higher.
- Consider using an additional fungicide treatment for Rhizoctonia control (Ridomil Gold PC or Quadris).
- Choose fields carefully. Fields closer to water bodies where temperatures are moderated by fog,

heavy dew, high humidity, and cooling breezes during summer are good candidates.

- Irrigate early planted fields, paying particular attention to the flowering and early pod set period. Daytime irrigation can also help to moderate high temperature effects during hot summer periods. It is critical to keep early planted lima bean plants from being water stressed during this period. Do not plant early lima beans dryland.

Although success in early lima bean plantings can be improved by following these suggestions, if there are extended periods with day temperatures in the 90s and night temperatures in the high 70s, yields will still be limited.

Agronomic Crops

Agronomic Crop Insects – *Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu*

Alfalfa

In addition to checking for weevils feeding on re-growth, be sure to begin checking all fields for leafhoppers within one week of cutting. Spring planted fields should also be sampled since they are very susceptible to damage. 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.

Field Corn

Continue to sample all fields for cutworms, slugs and true armyworm. For cutworms, fields should be sampled through the 5-leaf stage for damage. We are finding leaf feeding by cutworms as well as slug damage so be sure you do not confuse the damage. If slugs are damaging plants, you will be able to see "slime trails" on the leaves. As a general guideline for cutworms, a treatment should be considered in 1-2 leaf stage corn if you find 3 percent cut plants or 10% leaf feeding. If cutworms are feeding below the soil surface, it will be important to treat as late in the day as possible, direct sprays to the base of the plants and use at least 30 gallons of water per acre.

We are starting to see an increase in slug damage. With the continued cool, wet weather, slug eggs as well as newly hatched juvenile slugs can be found under residue in no-till fields. In past years, liquid nitrogen fertilizer applications have been used to help plants grow ahead of the damage; however, the use of Deadline M-Ps should be considered if the weather remains cool and wet and damage is increasing. A new fact sheet from Ohio State provides good information on slug biology, scouting and management of slugs on field crops

<http://ohioline.osu.edu/ent-fact/pdf/0020.pdf>.

You should also sample no-till fields for true armyworms, especially where a grass cover or volunteer small grains were burned down at planting. As a general guideline, a treatment may be needed for armyworms if 25% of the plants are infested plants with larvae less than one-inch long.

Small Grains

Continue to scout fields for cereal leaf beetles, armyworms and sawflies as well as aphids feeding in the heads of small grains. With the extended cool weather, the beneficials may not help to reduce aphid populations. Since populations of all of these insects vary from field to field, fields should be scouted to determine if economic levels are present. As a general guideline, if multiple insects are present, the threshold for each insect should be reduced by $\frac{1}{3}$.

Soybeans

With the continued cool, wet weather, seed corn maggot will be a potential problem in no-till soybeans as well as conventional soybeans where a cover crop is plowed under before planting or where manure was applied. All of these situations are attractive to egg laying flies. Control options are limited to the commercial applied seed treatments, Cruiser/Cruiser MAXX and Gaucho/Trilex 6000 (for use in commercial seed treaters only) and one hopper box material containing permethrin (<http://www.tracechemicals.com/trace/labels/KernelGuardSupremelabel.pdf>). Labels state early season protection against injury by seed corn maggot.

As the earliest beans emerge, slugs, bean leaf beetles and grasshoppers can be potential problems. As we found out in 2008, slug damage can be severe on soybeans if slugs are actively feeding when germination occurs since the soybean plant's growing point is within the cotyledons as they emerge.

On the earliest emerged fields, be sure to watch for bean leaf beetle adults feeding on the cotyledons and first true leaves. In recent years, bean leaf beetle populations have been heavier in the Mid-Atlantic on the earliest planted beans. Damage appears as scooped out pits on the cotyledons and leaf feeding appears as distinctive, almost circular holes, which are scattered over the leaf. Even though the feeding by first-generation beetles on soybean leaves has seldom resulted in economic yield losses (except if virus is vectored), fields should be scouted carefully to assess the damage. In the Midwest, this beetle vectors bean pod mottle virus. The presence of bean pod mottle virus was confirmed for the first time in Delaware in 2007 by Bob Mulrooney. The second-generation feeding on pods in late summer could cause significant damage. This generation would also be the generation to vector virus next spring. There are numerous treatment guidelines available. However, as a general guideline, a treatment may be needed if you observe a 20 - 25% stand reduction and/or 2 beetles per plant from cotyledon to the second trifoliolate stages. The Iowa State economic threshold for cotyledon stage is four beetles per plant. Once plants reach the V1 and V2 stages, their thresholds increase to 6.2 (V1 stage) and 9.8 (V2 stage) beetles/plant. These treatment thresholds should be reduced if virus is present or you suspected virus the previous season.

As far as the commercial applied seed treatments (Cruiser/Cruiser MAX and Gaucho/Trilex 6000), they are labeled to provide early protection against injury from bean leaf beetle. However, these seed treatments will not limit later population growth in mid to late summer. For growers who choose to control overwintering bean leaf beetles to limit virus transmission, information from the Midwest indicated that an early season foliar spray after plant emergence, followed by a second spray in

July for the first generation beetles might be tried. Because seed treatments will offer control of the overwintered beetles and reduce feeding injury, growers might want to use seed treatments to replace the early season foliar spray. Currently, we still do not have all the answers as to whether controlling the overwintered beetles with seed treatments will reduce virus transmission. Data from the Midwest is variable - some say that the use of seed treatments may be one part of an overall effective pest management program, while other data suggests that this approach might not give economic control of the virus. We are again evaluating seed treatments this year in areas of the state where bean leaf beetle populations have been heavy and bean pod mottle virus was found.

Regarding grasshoppers, in general, the treatment threshold is 1 per sweep and 30% defoliation. Multiple applications are often needed for grasshopper control.

Agronomic Crop Disease Update - Bob Mulrooney, Extension Plant Pathologist;
bobmul@udel.edu

Soybean Rust Update

Rust is developing very slowly despite excessive rainfall in some of the Gulf Coast states. Florida is remaining mostly dry. Rains have delayed some of the sentinel plot planting in LA and MS. There have been no new detections on kudzu since the last report. Those interested in following soybean rust can visit the ipmPIPE website at www.sbrusa.net.

Wheat Head Scab

The good news is that the current forecast for head scab is low for the next 72 hours. For wheat that was flowering from May 7 through May 10 the risk that scab could develop was 56-63%.

Avoid Spray Drift

Most applicators are aware that Quadris and Quilt can be very phytotoxic to certain apple varieties. Be sure that spray drift does not come in contact with apple trees or phytotoxicity can occur. With all the wheat that was recently

sprayed we have had several cases of phytotoxicity reported.

Soybean Cyst Nematode

It is still not too late to check for soybean cyst nematode especially if susceptible soybeans are going to be planted. Soil test bags with the submission form can be purchased at the

Extension offices. If you have a fax machine and need results quickly, test results can be sent via fax if you provide the number on the Nematode Assay Information Sheet. This information sheet can be found on the web at the Plant Clinic Website

<http://ag.udel.edu/extension/pdc/index.htm>.

Off-Target Movement of Herbicides is a Concern - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Herbicides are extremely effective products for controlling weeds and unwanted vegetation. When the herbicide lands in an area with desirable plants, it can cause discoloration, abnormal growth, or plant death. Off-target movement can have considerable consequences. Herbicides can move off target by a number of mechanisms, including: movement with water (leaching or run-off), physical drift (movement of small droplets by wind), and volatility (movement due high temperatures and moist conditions causing herbicides to vaporize after they are deposited on leaves or soil). Many herbicides can cause plant response at very low rates, particularly if the desirable plants are highly sensitive. Using application equipment and techniques to increase droplet size will reduce the likelihood of drift, but they will not overcome windy conditions. It is important to be aware of wind speed and direction. Most herbicide labels caution of increased risk when winds are in excess of 5 mph and caution not to spray when wind is greater than 10 mph. The two tables below demonstrate the potential for considerable drift with light to moderate winds.

Distance Water Droplets Will Drift While Falling 10 ft in a 3 mph Wind*

Droplet Diameter (microns)	Relative Size	Estimated Particle Drift (feet)
5	fog	3 miles
20	very fine spray	1,100
100	fine spray	44
240	medium spray	28
400	coarse spray	8.5

*Taken from Herbicide Spray Drift, NDSU, A-657, authored by Alan Dexter

Distance Water Droplets Will Drift While Falling 3 ft in a 5 mph Wind**

Droplet Diameter (microns)	Relative Size	Estimated Particle Drift (feet)
40	fog	140
100	misty rain	24
200	drizzle rain	9.5
400	light rain	4.0

**Taken from Avoiding the Potential for Drift, Monsanto Company

Be sure to use good judgment when spraying pesticides.

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

USDA's May Supply & Demand Report Reflects Bullish Tone

USDA's first official estimate of world grain markets for the '09/'10 marketing year was released on Tuesday morning, May 12. Overall the report was viewed as bullish for three reasons: U.S. supplies of soybeans are projected to drop near pipeline levels for the current '08/'09 marketing year; winter wheat production will be lower this year; and U.S. and world corn ending stocks were lowered for the '08/'09 marketing year. Further, world corn ending stock projections for the '09/'10 marketing year are currently estimated to be roughly 10 million metric tons less than carry-out stocks for the current marketing year. Projections for the '09/'10 marketing year were also noted to be below pre-report expectations for corn, wheat, and soybeans.

Marketing Strategy

This report, along with planting delays, should provide opportunities for advancing sales for both old crop and new crop corn, soybeans, and wheat providing outside market forces hold up. For example, weakness in the Dow and world markets over rode the bullish tone in Tuesday's supply and demand report in yesterday's trading. World ending stocks are projected to increase for '09/'10 marketing year wheat and soybeans, with corn stocks decreasing as stated above. Currently, nearby corn, soybean, and SRW wheat futures are trading at \$4.19; \$11.50; and \$5.78 per bushel. New crop corn, soybean, and SRW wheat futures are trading at \$4.47; \$9.81; and \$6.69 per bushel.

For technical assistance on making grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.

Announcements

Equine Pasture Walk

Tuesday, May 19, 2009 5:00-7:00 p.m.
Two Eagles Farm
1311 McQuail Road
Smyrna, DE

Learn about Natural Resource Conservation Services Cost Share Programs and EQIP Eligibility. See on-farm manure storage facility and storm water management projects. Learn about pasture management and managing the diet to avoid injuries and illness. Experts will be on hand from the University of Delaware and the Natural Resource Conservation Service (NRCS) to answer your questions!

Please bring a folding chair.

Nutrient Management (1.75), Pesticide (1) and CCA credits will be available.

This meeting is free and everyone interested in attending is welcome. Please call (302) 831-2506 to register by May 15.

Wye Strawberry Twilight Meeting

Thursday, May 21 6:00 p.m.
Wye Research and Education Center
Queenstown, MD

Meet at the farm operations complex, 211 Farm Lane - signs will be posted.

Come See:

- High Tunnel Fall/Spring Fruit Production
- Annual Plasticulture System
- 2nd year carry-over plot using bare-rooted dormant plants in a plasticulture system

University and USDA personnel will speak and be on hand to discuss research and cultural aspects of strawberry production.

The meeting will be held rain or shine (bring rain gear). Registration is not required. For more information contact Mike Newell (410) 827-7388. For directions go to the Wye Research and Education Center's website at <http://www.wrec.umd.edu/>.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of May 7 to May 13, 2009

Readings Taken from Midnight to Midnight

Rainfall:

0.65 inch: May 7

0.17 inch: May 9

0.02 inch: May 11

Air Temperature:

Highs ranged from 86°F on May 9 to 58°F on May 11.

Lows ranged from 67°F on May 9 to 43°F on May 13.

Additional Delaware weather data is available at
http://www.deos.udel.edu/agirrigation_retrieval.html
and
<http://www.rec.udel.edu/TopLevel/Weather.htm>

Weekly Crop Update is compiled and edited by Emmalea Ernest, Extension Associate - Vegetable Crops. For subscription information, contact her at emmalea@udel.edu or (302) 856-2585 x 587.

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.