



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 21, Issue 9

May 24, 2013

Vegetable Crops

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

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. The treatment threshold for aphids is 20% infested plants with at least 5 aphids per leaf. Be sure to also watch for beneficials. The threshold for mites is 20-30% infested crowns with 1-2 mites per leaf. We have seen an increase in cucumber beetle activity, especially in cantaloupe fields. Since beetles can continue to re-infest fields as well as hide under the plastic, multiple applications are often needed.

Peppers

Continue to sample for thrips and corn borer egg masses. Before fruit is present, young corn borer larvae can infest stems and petioles. Be sure to also check local moth catches in your area by calling the Crop Pest Hotline (instate: 800-345-7544; out of state: 302-831-8851) or visiting our website:

<http://agdev.anr.udel.edu/trap/trap.php>.

Potatoes

Fields should be scouted for Colorado potato beetle (CPB), corn borers (ECB) and leafhoppers. Adult CPB as well as the first small larvae can now be found in fields not treated at planting. 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. As a general guideline, controls should be applied for leafhoppers if you find ½ to one adult per sweep and/or one nymph per every 10 leaves.

Snap Beans

Continue to sample all seedling stage fields 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 1/3. Once corn borer catches reach 2 per night, fresh market and processing snap beans in the bud to pin stages should be sprayed for corn borer. Sprays will be needed at the bud and pin stages on processing beans. Once pins are present on fresh market snap beans and corn borer trap catches are above 2 per night, a 7-10 day schedule should be maintained for corn borer control.

<http://agdev.anr.udel.edu/trap/trap.php>

Sweet Corn

Continue to sample seedling stage fields for cutworms and flea beetles. You should also sample all whorl stage corn for corn borers. A treatment should be applied if 15% of the plants are infested. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible. Be sure to check trap catches since the spray schedules can quickly change. You can call the Crop Pest Hotline for the most recent trap catches (in state: 1-800-345-7544; out of state: 302-831-8851) or check our website at

<http://agdev.anr.udel.edu/trap/trap.php>

Effects of Fertilizer Nitrogen, Magnesium and Sulfur Rates and Sources on Yield and Quality on Pickling Cucumbers - Gordon Johnson, *Extension Vegetable & Fruit Specialist*; gcjohn@udel.edu

Balancing yield and quality is necessary in processing vegetables. Light skin color in eastern US grown pickling cucumbers is a quality issue for processors and inconsistent length:diameter (L:D) ratio leading to excess length is also a concern.

Fertility programs were evaluated for their effect on yield and quality factors in field studies in 2011 and 2012 at the University of Delaware research center near Georgetown. Two pickle cultivars, 'Vlaspik' and 'Expedition' were tested in all trials. Nitrogen rate treatments were 80, 120, 160, and 200 lbs/A applied as a split application with 40 lbs/A applied at planting and the remaining 18 days later using urea ammonium nitrate (UAN) solution or ammonium sulfate (AS) dry fertilizer.

In other trials, varied sources for sulfur and magnesium were tested for their effect on pickle yield and color including gypsum and dolomitic limestone preplant; potassium magnesium sulfate preplant and foliar; ammonium sulfate preplant and sidedress; magnesium sulfate sidedress and foliar, elemental sulfur foliar, and ammonium sulfate nitrate preplant.

Color and L:D data was recorded from 3A and 3B pickle grades. Fruit color was impacted by N and differed by variety. In Expedition there was an increase in chlorophyll as nitrogen increased. This effect was not seen in Vlaspik. Treatments with ammonium sulfate were more highly colored than those using UAN. Yield was not increased in either variety past the 120 lbs/a rate. Pickle length did not vary with N rate. There were no significant differences in yield or color between sulfur (S) or magnesium (Mg) treatments.

This research has shown that increasing nitrogen can improve pickle color; however, this effect is variety dependent. There may be critical N rates for varieties to achieve highest color. However, this needs to be balanced with potential for producing too much foliage and increasing the

potential for disease incidence. The addition of ammonium sulfate as part of the nitrogen source was shown to increase the amount of dark colored areas in pickle fruits. Additional nitrogen above 120 lbs per acre, while improving color, did not improve yield. By including a portion of the nitrogen source as ammonium sulfate, the same color improvement may be obtained without using higher total nitrogen rates.

There was an indication that ammonium sulfate produced more highly colored pickles in two studies but not in the third. Use of ammonium sulfate preplant did not have the same effect as when used as a sidedressing. Ammonium sulfate also had a significant effect on pickle length. This effect may be from the sulfur content and the specific balance between sulfur and nitrogen. Results suggest that N:S balance is important for color in some pickle varieties.

Adding additional magnesium or sulfur in other forms (other than ammonium sulfate) was not advantageous.

Planting Populations of Once-Over Harvest Pickling Cucumbers - Gordon Johnson, *Extension Vegetable & Fruit Specialist*; gcjohn@udel.edu

The population research with once-over harvest of pickling cucumbers done in Delaware and other states with gynocious hybrids has shown that between 55,000 and 65,000 plants per acre optimizes yield and quality with the least seed cost under good growing conditions (good irrigation, optimal nitrogen) in 28-30 inch rows with most varieties.

In studies with in-row and between row spacing of pickles, 15 inch rows with 4 inches between plants showed the highest yields and grade-outs. However, this narrow row planting has to be balanced against the costs of setting up planters with extra rows, narrow row cultivators (and narrow tired tractors), sidedressing equipment, and extra seed cost.

I was recently asked about the potential to switch from 30 inch rows to 20 inch rows. The high target should be 3 plants per foot (78,000

seeds per acre, 4 inch spacing) looking at the few studies done with this row spacing. Some work in Michigan showed that there was no difference in yields at narrow row spacing between 4 and 5 inch spacing between plants.

My research in 2010 showed that for most varieties (22 varieties tested), there will be 2-3 harvestable fruits per plant. Higher densities produced closer to 2, lower densities closer to 3 for the once over harvest.

The exception is with parthenocarpic types. These are types that set fruit without the need for pollination. They can produce up to 6

harvestable pickles per plant (most commonly 4-5) for once-over harvest. Small plot work with experimental parthenocarpic cultivars has shown similar or higher yields than standard types at 40% of the population in 30 inch rows (27,000 plants per acre). New releases of parthenocarpic pickle varieties adapted to Delmarva conditions will be available in the near future with high yields and acceptable length to diameter ratios. These should be considered for trial plantings. In a 20 inch system, planting parthenocarpic types at 8 inches between plants (40,000 seeds per acre) may have potential for even greater yields.

Potato Disease Advisory #4 - May 24, 2013 - Phillip Sylvester, Kent Co., Ag Agent; phillip@udel.edu

Location: Art and Keith Wicks Farm, Rt 9, Leipsic, Kent County
Greenrow: May 5

Date	DSV	Total DSV	Spray Interval Recommendation
5/5 - 5/8	18	18	7-days
5/5 - 5/12	3	21	7-days
5/12 - 5/15	0	21	10-days
5/15 - 5/20	11	32	5-days
5/20 - 5/23	2	34	5-days

The first late blight fungicide application is recommended once 18 Disease Severity Values (DSVs) accumulate from green row. Greenrow occurred on approximately May 5 at this location. Growers opting not to use the forecast system should put the first late blight fungicide application on when the plants are 6 inches tall, and repeat every 7 days. There are numerous fungicides now labeled for late blight control. See the 2013 Commercial Vegetable Production Recommendations-Delaware: <http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/>

The threshold of 18 DSVs has been exceeded. Thirty-four (34) DSVs have accumulated so far for any potatoes that established green row (approximately 50% emergence) prior to and since May 5. An additional two (2) DSVs have accumulated since the last report. Spraying as soon as possible with a protectant fungicide would be advised if not already on a spray program. Scout your fields regularly for symptoms. Any suspicious samples can be sent to the UD Plant Diagnostic Lab or dropped off at your local Extension office. Currently, Late Blight has only been detected in Florida.

Tomato Late Blight Update - *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.edu*

Currently there are no confirmed reports of late blight on either tomato or potato outside of Florida. However, there is one unconfirmed report of a tomato greenhouse outbreak in Berkeley Springs, West Virginia. Until this report is confirmed, the potato crop should continue to be protected with a preventative application of mancozeb or chlorothalonil. In addition, tomatoes in the proximity of the potential outbreak area should also be protected.

Fruit Crops

Bacterial Diseases in Tree Fruits - *Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu*

This is the time of spring when we see the results from fire blight infections in pome fruits. In addition, warm weather with higher humidity and more frequent showers creates conditions that are very favorable for bacterial spot in stone fruits.

Fire Blight in Pome Fruits

May is when fire blight peaks in apples, pears, Asian pears, and ornamentals such as crabapples and flowering pears from earlier flower infections.

The fire blight pathogen, *Erwinia amylovora*, overwinters on branch cankers from the previous year's infections. In spring, as temperatures warm, bacteria multiply at the edge of these cankers and create a yellow exudate that oozes on the bark surface several weeks ahead of bloom. Prior to bloom, insects that are attracted to the ooze, such as flies, spread the bacteria throughout the orchard. During bloom, pollinating insects (bees) spread the bacteria to the blooms. Blooms are susceptible to infection up to petal fall. Infections occur when temperature and moisture conditions are favorable, that is greater than 60°F with free water (rain or dew). Infection symptoms will appear 1-4 weeks after bloom. In addition, shoot blights can occur when inoculum is high in the

orchard. Shoot tip infections occur most commonly on watersprouts and young shoots with about 10 leaves.

Symptoms of the blossom blight phase of fire blight will be the wilting and death of flower clusters which then can spread to the branch and kill portions of the branch. Areas turn dark in color (brown or black). Shoot infections appear as a wilt with a characteristic "shepherd's crook" symptom. Shoot infections can also spread to nearby branches and even the main trunk. Fire blight infected areas are often called "strikes". There are apple rootstocks that are highly susceptible to fire blight (M.26, M.9, Mark). If they become infected, the canker will infect the trunk of the rootstock below the graft union and the tree will decline over 1-2 year period. What makes this disease particularly devastating is that one flower or shoot infection has the potential to kill the whole tree (particularly in young orchards).

In fire blight susceptible orchards, prebloom sprays of copper fungicides can help reduce the bacteria on plant surfaces. Use bloom sprays of the antibiotic Streptomycin on a 3-7 day schedule when conditions are favorable (above 60° F, and >60% humidity). Post bloom Streptomycin sprays may also be needed with susceptible trees to control shoot blights.



Severe fire blight symptoms
University of Georgia Plant Pathology Archive, University of Georgia, Bugwood.org

There are fire blight resistant apple and pear varieties and rootstocks. In our Delmarva production area, growers should consider using resistant varieties rather than trying to control the disease with sprays. Fire blight resistant apple rootstocks are also advised for our area.

Once fire blight "strikes" occur on branches, there is no curative action that can be taken. These strikes must be pruned out below the strike (8 inches below the visible discolored branch area) and destroyed. Do not leave the blighted prunings in the orchard. Also disinfect pruning shears and loppers between cuts using alcohol or bleach solutions to avoid inadvertent spread. If main trunks are infected, they should be cut 8 inches below the visible infection.

Bacterial Spot of Stone Fruits

Current weather conditions are favorable for the development of bacterial spot in susceptible stone fruits including peaches, nectarines, apricots, plums, pluots, apriums, and plumcots. Bacterial spot is caused by the organism *Xanthomonas pruni*. It is found on leaves, twigs, and fruits. This time of year we see the results of spring twig infections with shoot tips that are dead. Leaf symptoms after infection are most readily seen as a "shot hole" appearance, where the small infected areas dry up and fall out, or as tattered leaf edges. Fruit infections are dark colored small spots on fruit skin in that then lead to fruit cracking later on as spots coalesce.

The bacteria overwinter in twigs that were infected in the previous fall from diseased leaves. In the spring, during warm, wet conditions, the bacteria ooze out and can be splashed onto leaves and fruit. Fruit and leaf infections start around shuck split and then can continue throughout the season in susceptible varieties. Infections only occur during wet conditions.

In bacterial spot susceptible varieties, sprays of copper fungicides are applied in early spring prior to bloom to reduce surface bacteria numbers. To control the disease during the season, sprays should be applied from petal fall until 2 weeks before harvest. In wet conditions, applications should be close together (5-7 days), in dry conditions, applications can be spread further apart. Use antibiotic products

(Mycoshield, Fireline) or use fixed coppers with low phytotoxicity potential. Copper can cause leaf damage so care should be taken with their use.

A good article on copper use in fruits by Dave Rosenberger, Hudson Valley Laboratory, Cornell University can be found at <http://extension.umass.edu/fruitadvisor/sites/fruitadvisor/files/newsletters/fruit-notes/pdf/FruitNotes-vol77-no2-2.pdf>.

The best management strategy for bacterial spot is to use resistant varieties. Most eastern bred varieties have good bacterial spot resistance. Western bred varieties, developed in lower humidity areas, are often very bacterial spot susceptible and will be difficult and expensive to produce on Delmarva.

Agronomic Crops

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

Alfalfa

The first potato leafhoppers are now present in fields so be sure to sample on a weekly basis after the first cutting. Once plants are yellow, 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

In addition to cutworms and slugs, be sure to watch corn fields next to barley for true armyworms moving out of barley and into adjacent corn fields. You should also scout corn for armyworms in fields that were planted into a small grain cover. Remember, worms must be less than 1 inch long to achieve effective control. The treatment threshold for armyworms in corn is 25% infested plants with larvae less than one-inch long. Large larvae feeding deep in the whorls will be difficult to control.

Small Grains

As barley begins to dry down, be sure to watch for head clipping from armyworm. In fields that did not receive an insecticide spray we continue

to find economic levels of armyworms. On barley, significant head clipping from armyworms can quickly occur. As a general guideline, the threshold for armyworms in barley is one per foot of row and for wheat one-two per foot of row. Before making an application of an insecticide, be sure to check all labels for the number of days between last application and harvest.

It's Time for That Final Fertilization Boost to Hay and Pasture Before Summer's Heat

Richard Taylor, Extension Agronomist;
rtaylor@udel.edu

Although the weather this spring has not been kind to our state's hay producers and has even been limiting to a degree for those pasturing animals due to the colder than normal spring, it is time to consider your forage's need for late spring fertilizer. For the hay producers, this will need to wait until the first hay crop is removed but for those that have already managed to make a hay harvest, a late spring fertilizer application should be next on your agenda to consider.

Let's start with the product that will almost always give you the biggest bang (profit) for the dollars you spend on it. That is agricultural limestone when used to adjust your pH to the ideal range for the forage crop that you are growing. Many producers add lime either in the fall or very early spring but if you haven't applied any needed lime yet, now will be an excellent time to have it applied. If you haven't checked your pasture or hay field for pH using a 0 to 4 inch soil testing depth (remember all the lime you apply will be surface applied and moves downward only about 1 inch per year so this shallower testing depth is more appropriate for pasture and hay land), you should do this immediately and apply any required lime as soon as you can.

Why is soil pH so critical? If you have legumes in the pasture or are using a mixed grass and legume as a hay crop, the legume plant requires a higher pH than does the grass crop to produce the best yields. Legumes are useful in that they fix nitrogen (N) from the atmosphere and share

this N with the surrounding grass plants. That reduces your need to spend money to buy N fertilizer. Another aspect of soil pH is its impact on soil nutrient availability, especially phosphorus (P) but really for all nutrients. When the pH is in the optimum range for your soil type, the availability of all nutrients will be improved and can reduce the need for added fertilizer. In addition, the ability/quantity of the soil to hold cations (cation exchange capacity) which includes calcium, magnesium, potassium, the micronutrients, and ammonium increases.

After pH, the next important fertilizer addition will be potassium or potash (K) and P. Potassium has a tremendous impact on forages by helping them tolerate the heat and possibly drought stress associated with summer weather as well as helping with stress from insects and diseases. We usually recommend that half of the needed K be put out in late May or early June and the other half applied in late August or early September. The second application helps plants with the stresses experienced during the winter months from cold temperatures and wet soils. Phosphorus can all go out in the late spring application and will help with root development as well as with energy transfers within the plant as the sun's energy is captured by the leaves and converted into glucose and then into plant components such as cellulose and hemicellulose. Both P and K should be applied based on your soil test results and recommendations from the same 0-4 inch deep soil sample.

Finally, let's consider N. If it's a pasture or hay field and the legume component is more than 25% of the forage present, you possibly do not need any additional N fertilizer although yield, especially the grass component, will be increased with a small addition of N. To prevent the legume-bacteria association from reducing its fixation of N, you should limit fertilizer N application to no more than 30 lbs N/acre at any given application. If a drought seems imminent or has begun, it will be best to postpone fertilizer N applications to pasture or hay fields until after the soil is rewetted by rainfall (or irrigation, if available).

For grass hay producers, fertilizer N application will increase your yield potential as long as soil

moisture levels remain adequate for vigorous grass growth. Nitrogen applications should be based on the expected yield potential of your next harvest so review your records to see what your field has for hay potential. Dr. Marvin Hall from The Pennsylvania State University found in his research that from 40 to 60 lbs N/acre are needed for each ton of expected hay production. The one caution that should be taken into account is that if dry weather occurs the higher rate of N can lead to nitrate accumulation in the grass hay crop so if you expect soil moisture to be limiting before the next hay harvest use the lower rate of N per acre per ton of expected production.

A Challenging Year for Planting Corn - Don't Over Do the Nitrogen - *Richard Taylor, Extension Agronomist; rtaylor@udel.edu*

I had a producer call yesterday with an interesting question. He was a little concerned about whether the poultry litter that he had applied and incorporated right away was going to hold his corn until he could take a Pre-Sidedress Nitrogen Test (PSNT) and apply sidedress nitrogen (N). Our first conversation piece was on the current stage of growth of the corn and suggests that there may be some of you who could use a refresher on how to determine the leaf number stage of corn so let's start with that.

Up until the tassel emerges and we begin talking about the R-stages (reproductive stages) of corn, we use a vegetative designation to indicate the number of fully developed leaves on the corn plant. If three leaves are fully developed, the stage is called the V3 stage. So, exactly what is a fully developed leaf? A fully developed leaf is one in which the collar region of the leaf has emerged from out of the leaf sheath of the leaf below that leaf as can be seen in Photo 1.

The height of the individual plant or the number of immature leaves visible does not affect the actual growth stage designation of a given plant as that is only determined by the number of fully-emerged leaves. Soil nitrate levels for the PSNT are usually determined when the corn is 10 to 12 inches tall so that there is adequate time

to obtain the test results and apply N as a sidedress application before the crop grows too tall to safely drive through it applying UAN.

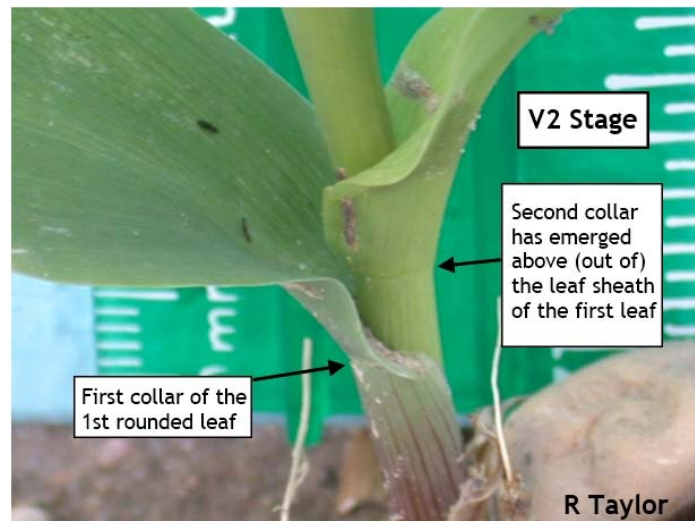


Photo 1. Showing the collar region of the first two fully emerged leaves

After we determined that the corn was still too small to conduct the PSNT, we discussed the critical value for the PSNT and the impact of a value greater than that critical value. Numerous tests around the region have indicated that once the PSNT value reaches 20 or higher there is little chance for an economic response to sidedress nitrogen. Work by Hansen and Blackmer (2000), actually showed that when the PSNT N-concentration was above 24 ppm, there were more test locations fertilized with extra nitrogen fertilizer that saw a reduction in yield than saw an increase in yield (about 35 versus 25 percent of test locations). For irrigated growers who have the ability to fertigate corn, the PSNT possibly can save them money by indicating if there is enough N available from manure to carry them to when they traditionally irrigate the crop. In such a case, the grower could skip the sidedress application, monitor the health of the crop, and apply N if the crop needs more during a regular irrigation event.

This procedure is a very real possibility this year since the cool and almost cold spring weather. Until recently, especially in the northern part of the state, little mineralization was probably taking place so much of the N that poultry litter or other manures would supply is still available in the soil. Keep in mind that the majority of the

N in manures and poultry litter is in an organic form and must be mineralized (converted from organic N to an inorganic form—ammonium N) before it can be taken up by the crop. Mineralization is a microbial process and requires not only soil moisture but reasonably warm soil temperatures. I think that the mineralization process has been delayed quite a bit this year with the cold March and April weather we've experienced and that the N from manure or poultry litter applied and incorporated some time ago is only now becoming available through mineralization.

Postemergence Sprays for Corn Fields with Palmer Amaranth - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

I have seen Palmer amaranth seedlings emerging in corn fields that had no preemergence herbicides applied. There are Palmer amaranth plants in DE and MD that are resistant to glyphosate. So fields with Palmer amaranth present, or fields where you suspect it is present, need to be treated with an effective herbicide (or herbicide combination) that will provide postemergence control as well as residual control. Some considerations include atrazine, Callisto, Capreno, Impact, Permit Plus, Halex, Realm Q, Resolve Q. Other products such as Status or Liberty provide effective postemergence control, but will not provide residual control.



Palmer amaranth seedling

Palmer amaranth plants look very similar to smooth and redroot pigweed. However, Palmer

amaranth leaves, stems, and petioles do not have hairs (smooth and redroot pigweed do have fine hairs). Palmer amaranth's leaves have long petioles that are often as long, or longer, than the leaf blade. As a result, the leaves often droop. Occasionally, leaves will have a variegated "V" mark or watermark across the leaf blade. On-line photos can be found at http://extension.udel.edu/ag/files/2013/05/AM_APA_images_lg.pdf



Palmer amaranth on left and smooth pigweed on right, note presence of hairs on the smooth pigweed.

General

Closer SC and Transform WP Insecticides Labeled - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

Closer SC and Transform WP - (Dow AgroSciences) - Sulfoxafloflor, the active ingredient in Closer SC and Transform WP, recently received a federal label. It also now has a state label in Delaware. This active ingredient belongs to a novel chemical class called sulfoximines offering effective control of many important sap-feeding insect pests. Closer SC is labeled on a number of fruit and vegetable crops. Transform WP is labeled on a number of field crops as well as root and tuber vegetables, potatoes, and succulent and edible podded beans. Please refer to the following links for the complete list of crops labeled, use rates, and restrictions.

Closer SC -

<http://www.cdms.net/LDat/IdB67003.pdf>

Transform WP -

<http://www.cdms.net/LDat/IdAM5001.pdf>

Announcements

Blueberry Educational Meeting and Field Tour

Saturday, June 8, 2013 9:00 – 11:00 a.m.

Bennett Orchards
31442 Peach Tree Lane
Frankford, DE 19945

Do you currently grow blueberries or are you considering commercial blueberry production?

This meeting will be a great opportunity to tour the eight acre blueberry planting at Bennett Orchards and hear from Hail Bennett about his experiences establishing a commercial blueberry planting.

Gordon Johnson, University of Delaware Extension Vegetable Specialist, and Emmalea Ernest will discuss recommendations and research on establishment practices and variety selection.

Joanne Whalen, University of Delaware IPM Specialist, will provide the latest information on Spotted Wing Drosophila management.

Refreshments will be served.

Please preregister by contacting Karen Adams at adams@udel.edu or call (302) 856-7303 ext. 540.

Maryland Grape Growers Association 2013 "Summer Field Day" Viticulture Workshop

Saturday, June 15 8:30 a.m. - 5:00 p.m.

Harford Vineyard and Winery
1311 West Jarrettsville Road
Forest Hill, Maryland

This hands-on learning opportunity will provide current and future vineyard owners, operators, and managers throughout the mid-Atlantic region with the latest information on Integrated Pest Management, insect recognition and control, equipment safety, and much more.

In addition to a walking tour and current situation assessment of the vineyard, the program will include a number of sessions on topics important to grape growers in Maryland. Among them:

Dr. Joe Fiola, Viticulture and Small Fruit Specialist with the University of Maryland will present a session on integrated pest management. This topic includes scouting current vineyard conditions, assessing canopy management, and evaluating options for disease and pest control.

Dr. David Myers, Associate Professor of Plant Science with the University of Maryland will discuss the unforgiving nature of machinery and the common mistakes and oversights that can lead to injury and worse on the farm. Dr. Myers will also present a session on pesticide and herbicide application including the correct setup and use of sprayer technology.

Dr. Anne Nielsen, Tree and Small Fruit Entomologist with Rutgers University will present a session on vineyard insect pests – how to recognize them, when to expect them, and how to control them. The discussion will cover common, new and anticipated pests likely to call mid-Atlantic vineyards home this year.

Kevin Mooney, owner and operator of Harford Vineyard and Winery will host the vineyard walk. A winery tour and tasting are included.

Private and Commercial Pesticide Applicator Recertification credits will be awarded, for the session presented by Dr. Myers.

Pre-registration for the Summer Field Day is open through June 6 at a cost of \$35 for current MGGA members and \$45 for non-members. On-site "at-the-door" registration begins at 8:30am at a cost of \$45 for current MGGA members and \$55 for non-members. A continental breakfast will be provided. Please bring your lunch, beverages, and a lawn chair. Clothing and shoes appropriate for a day in the vineyard are recommended and adequate sun protection is strongly encouraged.

To pre-register online, and for more information including mail-in forms, a detailed agenda, driving directions, etc., please visit <http://www.marylandgrapes.org>.

**2013 University of Delaware Cooperative
Extension Horticulture Short Course:**

Pest and Beneficial Insect Walks

June 26, 2013 4:00-6:00p.m.

UD Carvel Research & Education Center

Sussex County Extension Office

16483 County Seat Hwy.,

Georgetown, DE

Cost: \$15

Tour the grounds of the Sussex County Extension Office in Georgetown to identify insects, diseases and beneficial insects in the landscape.

Instructors: Nancy Gregory, Brian Kunkel, Carrie Murphy, and Tracy Wootten

Register with Tracy Wootten: (302) 856-7303 or wootten@udel.edu

**2013 University of Delaware Weed Science
Field Day**

Wednesday, June 26, 2013

University of Delaware

Research and Education Center

(old office building)

16686 County Seat Highway

Georgetown, DE 19947

Registration begins at 8:15 at the Grove near the farm buildings. We will start to view the plots at 8:45 am. A variety of herbicide programs for conventional tillage and no-till production are being evaluated. Many of the registered corn, soybean, and sorghum herbicides are being tested, herbicide evaluation for watermelon, sweet corn and other vegetables are also be included.

CCA CEUs will be offered along with DE Pesticide credits.

To register, please call Karen Adams at 302-856-7303 ext. 540 or adams@udel.edu. For more information, contact Dr. Mark VanGessel at 302-856-7303 or mjv@udel.edu.

On Target Application Academy

Wednesday, June 26 3:00-5:00 p.m.

University of Delaware

Research and Education Center

(old office building)

16686 County Seat Highway

Georgetown, DE 19947

Looking for more information on spray nozzle technology?

Are your nozzles the best match for your herbicides?

Are you doing all you can to keep the spray on the intended site?

This program was developed and will be delivered by Dr. Bob Wolf for growers who self-apply herbicides and custom applicators. The On Target Application Academy is a one-of-a-kind educational opportunity to provide growers extensive hands-on training for better awareness of herbicide application practices to achieve the most effective weed control possible with today's emerging product and equipment innovations, and help mitigate spray drift – which is a continuous area of focus for the agricultural industry. Dr. Wolf recently retired as Professor Emeritus from Kansas State University where he worked as a Professor and Extension Specialist in Application Technology in the Biological and Agricultural Engineering Department. Wolf's main responsibility at Kansas State was to conduct an extension and research program in all areas of chemical/pesticide application with a particular emphasis on nozzle technology.

This workshop is sponsored by BASF. There is no registration fee.

More information can be found at:

<http://www.agro.basf.us/stewardship/on-target-stewardship.html> or contact Mark VanGessel (302) 856-7303.

2013 Wye Weed Science Field Day

Thursday, June 27, 2013

Wye Research and Education Center

Queenstown, MD

There will be a morning tour at the Wye Research and Education Center. CCA CEUs will be offered along with MD Pesticide credits.

For more information, contact Dr. Ron Ritter at 301-405-1329 or by email rlritter@umd.edu.

Delaware Soybean Board Tour
Thursday, August 22, 2013

Tour sponsored by the Delaware Soybean Board

More details in the next Weekly Crop Update.

Respect the Rotation

Thursday, August 22 4:00-6:00 p.m.
UD Research and Education Center
Georgetown, DE

Respect the Rotation is an initiative to elevate the importance and adoption of herbicide diversity and integrated weed management.

Rotate Modes of Action

Reduce the selection pressure of a single mode of action by using multiple modes of action during both the growing season and from year to year.

Rotate Crops

Crop rotation diversifies weed management tools.

Rotate Herbicide-Tolerant Traits

Alternate herbicide-tolerant (HT) traits and/or use HT trait stacks for more efficient herbicide rotation.

Overreliance on a single weed-control method causes resistant weeds to develop and puts the herbicide-tolerant system used and the ability to grow a crop in a specific field in jeopardy. When resistant weeds develop, farmers face the additional costs required to control them—unplanned herbicide applications, intense manual labor, and in extreme cases, total crop loss. Integrated Weed Management practices help to preempt these issues and result in successful management of resistant weed populations. Field plots and demonstrations on rotations for integrated weed management will be discussed.

Supported by Bayer CropScience and in collaboration with Delaware Soybean Board.

For more information contact Mark VanGessel (302) 856-7303

Organic and Sustainable Agriculture Field Tour

Wednesday, September 4, 2013

Hold this date for a late afternoon or evening field day highlighting research and demonstration projects for organic and sustainable agricultural production. More details to follow.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of May 16 to May 22, 2013

Readings Taken from Midnight to Midnight

Rainfall:

0.26 inch: May 18
0.20 inch: May 19
0.01 inch: May 21

Air Temperature:

Highs ranged from 85°F on May 16 to 69°F on May 18.
Lows ranged from 69°F on May 22 to 56°F on May 17.

Soil Temperature:

68.5°F average

Additional Delaware weather data is available at
http://www.deos.udel.edu/monthly_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

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