WEEKLY CROP UPDATE
UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 24, Issue 8 **May 13, 2016**

Vegetable Crops

Vegetable Crop Insect Management

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

Asparagus
Continue to scout for asparagus beetle adults and eggs. Feeding by beetles can disfigure spears. Depending on the market, the presence of eggs on the spears can make them unmarketable. As a general guideline, a treatment is recommended if 2% of the spears are infested with eggs or if 5% of the plants are infested with adults. In addition, in recent years multiple applications are often needed to control this insect pest and avoid damage so early detection is needed.

Melons
Be sure to scout all melons for aphids, cucumber beetles, and spider mites. The first cucumber beetles can be found in the earliest planted fields. As soon as we get a few consecutive days of warm, sunny weather, populations can explode so be sure to scout carefully since damage occurs quickly. Since beetles can continue to re-infest fields as well as hide under the plastic, multiple applications are often needed to achieve control.

Snap Beans
Be sure 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 one third. You will also need to look for bean leaf damage in early planted fields. Damage appears as circular holes in leaves and significant defoliation can quickly occur. As a general guideline, a treatment should be considered if 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.

Transplant Woes

– *Gordon Johnson, Extension Vegetable & Fruit Specialist*; gcjohn@udel.edu

Weather conditions have been unfavorable for early transplanted warm season vegetables. We have not had any consistent warming trends to heat the soil under black plastic mulch. As a result, plant losses have been high because transplants have been slow to root into the soil (see previous post http://extension.udel.edu/weeklycropupdate/?p=8993). To make matters worse, we have had temporary flooding in some fields. Previous experience has shown when plastic beds are flooded over the top and planting holes are inundated, plant losses will be severe and replanting will be delayed significantly.

In addition, transplants have tended to be leggier (stretched) due to the overcast conditions. Transplants in small cells do not hold very well for extended periods and may become

crowded and root bound. Another problem is diseases in transplant trays during extended wet hardening off periods outside (such as gummy stem blight and Pythium). It is hard to gauge watering when plants have heavy rainfall on trays. Spot watering (edges of trays on wagons or holding areas) is required to limit wetness in the middles. Watch for damping off and apply labeled fungicides as needed.

In seedless watermelons, losses of plants in the field can be problematic, especially where pollenizers died. Replanted pollenizers will flower later and may delay fruit set. To complicate matters, many seedless watermelon growers have switched to co-planted pollenizers (pollenizers planted in the same cell with the seedless variety). Loss of both co-plants will require replacing both seedless and pollenizer. Loss of the seedless in the co-planted cell will require replanting next to the pollinizer with a seedless transplant. Loss of pollenizers in the co-planted cells may necessitate adding pollenizers between plants when replanting is straight pollenizer trays may are available. Another complication is that it may be difficult to tell which plant has died in co-planted cells. Fields with reduced numbers of pollenizers can have fruit set problems, reduced fruit sizes, and increased hollow heart, particularly in the crown set.

Potato Late Blight Update #3: May 12, 2016 – *Nathan Kleczewski, Extension Specialist - Plant Pathology*; nkleczew@udel.edu

Green row: April 29th, 2016

	Townsend		Camden		Leipsic		Kenton	
Date	**DSV**	**Total DSV**	**DSV**	**Total DSV**	**DSV**	**Total DSV**	**DSV**	**Total DSV**
4/29-5/5	3	3	11	11	10	10	13	13
5/9-5/12	3	9	6	17	2	14	4	17

Notes: Season severity of 18 severity values indicates the need for the first fungicide application. An accumulated severity of 7 after fungicide application identifies the need for a subsequent fungicide application. Eighteen severity units will likely be achieved in some areas before the next report. Cool, wet weather has been favorable for late blight, although there are no reports of the disease in the region to date.

You can personalize your late blight forecasts for specific fields, sign up for email or text alerts, and enter in management information at http://blight.eas.cornell.edu/blight/. Real time fungicide application timing tables for locations within Delaware can be accessed at http://blight.eas.cornell.edu/blight/DE

See the 2016 Commercial Vegetable Production Recommendations-Delaware for recommended fungicides.

Any suspect samples can be sent to the Plant Diagnostic Clinic or dropped off at your local extension office. Dr. Nathan Kleczewski can also be contacted at nkleczew@udel.edu or 302-300-6962.

The website USABlight tracks tomato and potato late blight across the nation and can be found here: http://usablight.org/. Information on scouting, symptomology, and management can also be found on this website.

Odd Pest in Brassica Fields – Ants! – *Jerry Brust, IPM Vegetable Specialist, University of Maryland*; jbrust@umd.edu

One odd thing I have seen, which has also been reported to me from a couple of farms, is collapsed plants, usually a broccoli or cabbage transplant, with ants where one would expect to find maggots or cutworms when digging up the plant. On some of these farms the ants had attacked the maggot or cutworm doing the damage, but on many of the farms it was the ants that were doing the damage. I have seen this before; almost always early in the season usually during cool wet periods. It is unclear if the ants are there because a nest was ripped apart during tillage operations and the ants are getting the nest back together or if it is a new nest trying to expand. Normally the ants tend to only disturb a few plants, but on a few farms 20-30% of the plants were damaged. Most of the ant activity is below ground so control is difficult if needed. If cutworms or cabbage maggots are found with the damaged plants the control recommendations in the 2016 Mid-Atlantic Commercial Vegetable Production Recommendations for them can be used and this will help with the ants too.

Organic growers are in a greater bind for control of ants. I have seen controls such as diatomaceous earth, mixtures of garlic and hot pepper, drenches of pyrethrums, boiling water poured onto the soil, and others, but none work very well, if at all. One thing that seems to work, but is labor intensive, is using some sort of ring that goes around the base of each plant. This ring could be some old PVC pipe that is cut to about 2-4 inches in length and is about 1-3 inches in diameter. Some growers use Vaseline at the top of the ring to further hinder the ants from entering the ring. If the ants are fairly deep below ground it will be difficult to get the ring deep enough to keep the ants out without restricting the roots of the growing plant.

Fruit Crops

Revisiting Fruit Losses Due to the Late Freeze and Fruit Drop in Tree Fruits – *Gordon Johnson, Extension Vegetable & Fruit Specialist*; gcjohn@udel.edu and *Emmalea Ernest, Associate Scientist - Vegetable Crops*; emmalea@udel.edu

Losses in tree fruits due to the late freeze are now more obvious. As one grower put it "a light crop becomes even lighter", that is, the damage is not fully known for several weeks. Fruits that seemed to be set often do not develop because the embryos have been damaged.

Plum, **pluot**, **plumcot**, and **apricots** have 80-100% losses. **Peaches** and **nectarines** are more variable depending on location and variety. In discussions with growers, some orchards are carrying only a 20% (or less) crop, others are in the 40-60% crop range. However, certain varieties, such as Redhaven and White Lady, and later flowering varieties are carrying a heavier (near full) crop. What remains to be seen is if there is hidden freeze damage to existing fruit leading to continued drop.

Fruit drop is a result of unfertilized or poorly fertilized seeds, freeze damage to buds and flowers (as in this year 2016), competition between fruits, or shading. In other years, fruit drop may be due to poor pollination as a result of cold, rainy weather during bloom in self-fertile fruits such as peaches, or poor insect pollinator activity during flowering in insect pollinated fruits such as apples. In stone fruit, some fruit that is not fertilized will remain on the plant for 25-50 days after bloom and then will drop before pit hardening starts. This is what we are seeing now in cold damaged peaches and nectarines.

Another cause of fruit drop is cloudy weather during the period 5 to 7 weeks after bloom. A continuous 4 day period of cloudy days during this period will cause fruit to drop. In addition, defoliation due to disease such as peach leaf curl, chemical injury such as copper fungicide damage, or severe storms can cause fruit drop during this critical period.

Another wave of natural fruit drop occurs in late May or early June. This fruit drop is due to competition between fruit for sugars stored and produced by the tree. A tree can only carry a certain load of fruit and will naturally drop smaller and weaker fruit during this period. With the light crops in 2016, competitive drop should be minimal. However, when there are large differences in timing of fruit set (late set fruit on the same twig near to earlier set fruit), the larger fruit will become a sink for resources and the smaller fruit will abort leading to further crop reduction.

In 2016, **Asian pears** and **European pears** had some flower losses due to the freeze but still have good crops. Most **apples** were minimally affected by the freeze.

Sweet cherries in the open have high losses; however, those in high tunnels have full crops if they were covered early. **Sour cherries** have a much reduced crop. One of the issues with sweet cherries is that cross pollination is needed for many varieties. If a pollinator variety suffered damage, the varieties dependent on the pollinator will have reduced crops, compounding the freeze damage.

Marginally hardy fruits such as **figs** were killed to the base and **persimmons** were also damaged.

Strawberries also had some fruit losses in both plasticulture and matted row systems and have a higher than normal amount of deformed berries in early pickings. **Brambles** (raspberries and blackberries) have more tip dieback this year than usual. Early flowering **blueberry** varieties (mostly Southern highbush) have some freeze loss in our trials at Georgetown, but it will be difficult to estimate yield loss until closer to harvest.

Agronomic Crops

Agronomic Crop Insect Management

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

Alfalfa
After the first cutting and on any new plantings, be sure to watch for the first leafhoppers. 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
Continue to watch seedling stage fields for both cutworm and slug damage, especially in no-till corn fields. It is important to check all fields for cutworms, even where at-planting treatments were used. The treatment threshold is 3% cut plants in spike to 3-leaf stage corn. In addition to cut plants, be sure to watch for leaf feeding which can be an indication of the potential for significant cutting damage and yield loss. Please visit the following link for pictures of leaf feeding:

http://www.ent.iastate.edu/imagegal/plantpath/corn/bcutworm/1287bwcholes.html

The weather continues to be very favorable for slug damage and we continue to see fields with economic levels of damage. Although they are generally a problem in fields with heavy no-till covers and a history of problems, we are finding problems in fields with no history of problems so be sure to check as soon as plants are spiking out of the ground. Materials labeled for slug management in field corn include Deadline M-Ps (the main metadelhyde product available), Sluggo (iron phosphate) and IronFist (sodium ferric FDTA). In years past, 30% nitrogen applied at night when the plants are dry and there is no wind has resulted in variable levels of success since you must contact the slugs. The rate used in past years was 20 gallons per acre of 30% N on corn in the spike to one-leaf stage and the mix was cut 50/50 with water to reduce – **but not eliminate** - plant injury.

Small Grains
We continue to find low levels of newly hatched armyworm larvae and an occasional medium size grass sawfly larvae in barley and wheat fields. We also continue to find economic levels of cereal leaf beetle damage. The greatest damage from cereal leaf beetle can occur between flowering and the soft dough stage. Population levels remain variable throughout the state so scouting fields will be the only way to determine if an economic level is present.

Although armyworm can attack both wheat and barley, they can quickly cause significant losses in barley. Heavy defoliation of the flag leaf can result in significant economic loss. Armyworms generally begin head clipping when all vegetation is consumed and the last succulent part of the plant is the stem just below the grain head. Larvae can feed on the kernel tips of the wheat, resulting in premature ripening and lower test weight.

Soybeans

Seed corn maggot can be a problem in no-till soybeans as well as conventional soybeans where a cover crop is plowed under immediately before planting or where manure was applied. All of these situations are attractive to egg laying flies. Control options are limited to commercial applied seed treatments containing an insecticide. Labels state early season protection against injury by seed corn maggot. No rescue treatments are available for this insect pest.

Wheat Disease Update

– *Nathan Kleczewski, Extension Specialist – Plant Pathology*; nkleczew@udel.edu

The wet weather continues to keep Delaware and Eastern Maryland at moderate to high risk for Fusarium head blight (FHB). Elevated FHB risk may persist through next week. There is still a large amount of wheat that just started to flower or will flower next week. If we are lucky the late-flowering wheat could somewhat escape the current elevated period of risk.

Remember that applications of Caramba, Prosaro, or Proline should be made from the start of flowering and can be made up to 5-6 days after this point without significant drop-off in efficacy. The start of flowering is when 50% of the main tillers have anthers emerging from the center of the heads. We target this timing because the main tillers constitute the majority of yield. Infections of anthers can result in the fungus colonizing the head and rachis, resulting in reduced nutrient and water flow to the grain. This action results in blank or lightweight kernels and reduced yield. If the fungicide is applied too early or too late expect reduced efficacy (Figure 1).

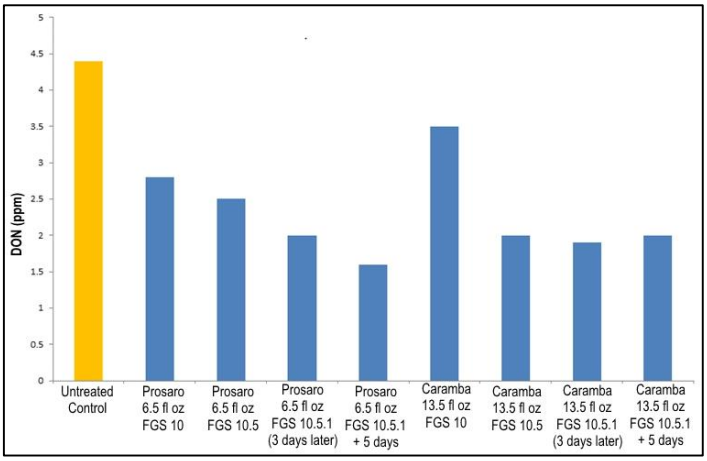


Figure 1. The effects of Prosaro and Caramba, applied at different timings, on DON. Lower levels are better in this case. Note that the FGS 10.5 application was only 3 days from flowering, which may explain the efficacy in application. There is no way to tell if you are 3, 5, or more days from flowering. For optimal impact on FHB and DON, try and hit the FGS 10.5.1 to 10.5.1+5 window. Chart based on data from A. Grybauskas.

The application of the right fungicide, applied perfectly, to a susceptible variety may not result in satisfactory suppression of FHB and DON in a high risk year, as these products only reduce DON by 45% and visual symptoms by 50% on average, compared to untreated controls. This reduction can be increased to over 75% compared to untreated, susceptible controls when a good moderately resistant variety is combined with proper fungicide application. This is why FHB management starts with the **selection of a good moderately resistant variety**.

I suggest growers assess their wheat fields for FHB 18-20 days after the start of flowering. Assessing fields earlier than that will not give the disease time to develop, and later than that may result in masking of symptoms as the wheat starts to mature. Run 10-20 transects through different parts of the field. Pick 10-20 per location without looking at heads. Bring the heads back to your vehicle and determine the percent of heads with FHB-derived bleaching. If you have more than 10% bleached heads, you may have an FHB issue. Although bleaching does not guarantee elevated DON, it may indicate that there is a potential for this to occur. Look for areas of the field where coverage may have

been poor. **If possible, harvest and store highly symptomatic fields or areas separately from good fields to minimize contamination.** FHB symptoms are very pronounced, making the disease often appear worse from afar. The same can be said for other diseases such as BYDV-a little disease looks like a lot.

Unmanaged wheat may have reduced yields if you planted varieties susceptible to stripe rust or powdery mildew (Figure 2). The cool weather and high humidity has allowed both of these diseases to continue to develop in susceptible varieties and in some cases, powdery mildew has moved onto the flag leaf around heading, which will likely result in yield losses if favorable conditions persist. This of course, will be coupled with potential FHB associated issues.

Figure 2. An area of a research plot in Middletown, DE infected with stripe rust. A note about rusts- they start as isolated patches, or foci, and develop and spread over time. Early detection can save you from potential yield losses later on if favorable environmental conditions persist.

Checks in Fields – Useful Tools for Making Future Management Decisions

– *Nathan Kleczewski, Extension Specialist – Plant Pathology*; nkleczew@udel.edu

This year I have been encouraging growers to leave at least one untreated strip in fields in cases where they were on the fence about making a fungicide application and pulled the trigger. Although a single strip will not account for all the variability in disease and yield at the field level, it can give you an idea of the effect of the application on disease and yield in a given year. This information is particularly useful when profit margins are tight and every trip across the field needs to count.

When leaving an untreated strip, try to run it through the center of the field and avoid field edges, tree lines, or extremely low/high areas. Ideally the strip will be wide enough to allow you to do a yield check to see not only if disease was controlled, but if the disease caused enough yield reduction to result in the application paying off. Disease presence does not guarantee yield loss, but you will not know if this was true in your case unless there is an untreated strip in the field. Comparisons at the field level (e.g. Field A vs Field B) are not valid for this type of purpose due to all of the confounding factors that could ultimately impact yield, in addition to disease. For example, variety, planting date, soil type, nutrient levels, disease presence, severity, and onset, presence of other diseases, insects, weeds, and other agricultural factors, all could play a role in making the yield of Field A different from Field B. By leaving an untreated strip, you at least can say something about the effect of a particular application within a field. If you are interested in conducting on farm research, which is a little more involved than simply leaving an untreated strip but easy to do given a little effort, I encourage you to read Bob Nielsen's "Practical Guide to On Farm Research", which is located at the following location: https://www.agry.purdue.edu/ext/corn/news/timeless/onfarmresearch.pdf .

Texas Panicum Control in Corn and Soybeans – *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu

Below are a few key points from a two years of research funded by the DE Soybean Board:

• Herbicides applied at planting in either corn or soybeans generally do not provide full-season control and required a postemergence herbicide. The large seeds of Texas panicum allows it to emerge from relatively deep in the soils, and so results with residual herbicides applied at planting have been inconsistent.

• Postemergence control in corn was highest with two applications of glyphosate (97%) or single application of Accent Q (89%). A single application of glyphosate provided only 78% control. The addition of Resolve with glyphosate did provide residual control resulting in improved full-season control (83%).

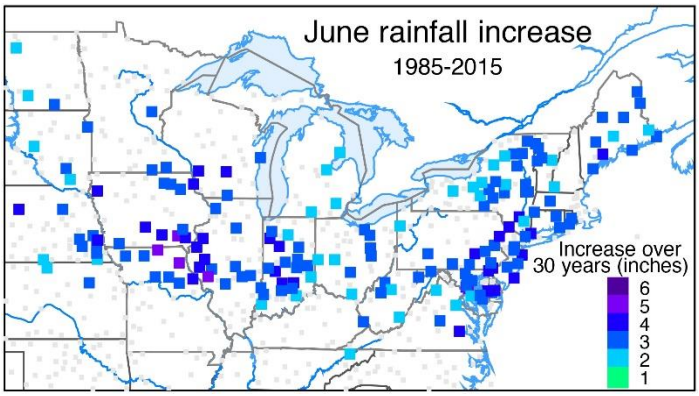
• Postemergence control in soybeans was 100% with either glyphosate or Select Max in one of two years. In the other year, when Texas panicum emergence was delayed, one application of glyphosate was not adequate and required either a second glyphosate application, or tankmixing glyphosate with Zidua extended residual control.

General

Spring Climate Trends in the Northeast – *Dave Hollinger, Director, USDA Northeast Climate Hub*

You might have noticed that spring in the Northeast is coming earlier than it used to. There is reliable evidence from many studies that conditions in the Northeast and upper Midwest have become warmer and wetter in recent decades, especially in the winter and spring. The spring warmth means that snow is melting earlier and plant growth is starting sooner. On average, the last spring frost in the Northeast is about a week earlier now than it was 30 years ago. However, the change is not as positive as one might expect since the start of growth for many plants has shifted even earlier than the last frost date leading to increased chances of frost damage. This happens most often when unusually warm temperatures in March are followed within 2-5 weeks by a frost event. In 2012, record high March temperatures were followed by record low temperatures (for the date) at the end of April with terrible consequences for fruit growers across Michigan, Ontario, New York, Vermont, and surrounding states. In some places losses were almost total. In something of a repeat, unusual warmth in the Northeast this past winter was interrupted by very cold outbreaks in mid-February and early April. This combination was particularly bad for peaches in New Jersey, Connecticut, parts of New York, and other NE states where >90% losses have been reported.

Another trend affecting farmers across the Northeast and much of the Midwest is more rain in June. The symbols on the map below show the location of long term weather stations where June rainfall has increased significantly over the last 30 years (nowhere in the NE has there been a significant decrease in June rain). Much of the Northeast has seen an average June increase of 2 to 4 inches, a big increase (close to double) compared to 30 years ago. However, current June rainfall totals are not unprecedented, as similar accumulations were common in the late 1970s and early 1900s. The result of the extra rain for farmers is a big decrease in the number of days that fields can be worked and increasing problems with blights and disease. The only other months with similar widespread increases in rainfall across this region are October (especially in southeastern Pennsylvania, Maryland, and Delaware) and December. November is the one month that has seen a widespread significant decrease in precipitation.



Although it is not clear whether the observed pattern of wet Junes will continue, the National Weather Service's Northeast River Forecast Center reports that springtime in the Northeast is often much wetter than usual as an El Niño fades – right where we are now. Over the longer term, the newest climate model simulations for the Northeast show that June and July will feature the largest monthly increases in rainfall. All of these models agree that the Northeast US will continue to get wetter for the foreseeable future. There are few places anywhere in the world where all of the models line up in this way.

Want more updates like this from the Northeast Climate Hub? Sign up for our Quarterly Newsletter, Follow us on Twitter at @USDAClimateHubs, and please join us on May 18th at 2pm EST for our next webinar, *Cornell's Climate Smart Farming Program: Research, Tools, and Extension Support for Farmers in NY and the Northeast*.

Announcements

Free Webinars in May, Sponsored by the Mid-Atlantic Women in Agriculture

5/25: Why Value-Added Products Fail - Value-Added products can increase your enterprise profit picture, but only if it's a marketable product that fits your resources and farm mission. This presentation explores what works and what doesn't when developing and marketing value-added farm products. And, helps you answer the question, 'Just because I can produce a value-added product; should I?

To register:
http://www.eventbrite.com/e/wednesday-webinars-registration-11452674257

Webinars begin at noon EST. Duration is approximately 1 hour. For optimal performance we suggest using Internet Explorer as your web browser and connecting via Ethernet connection instead of wireless (wireless will work, but a hard line is more stable)

See website for more information and other upcoming topics: https://extension.umd.edu/womeninag/webinars

If you do not have access to high speed internet and would like to participate in one of the above webinars, contact Tracy Wootten at wootten@udel.edu.

New Castle Co. Beginning Farmer Series
Fruit Production Workshop
Monday, May 16, 2016 6:00-8:00 p.m.
Milburn Orchards
1495 Appleton Road
Elkton, MD 21921

Participants who attend this workshop/tour will have an opportunity to visit Milburn Orchards with UD Fruit/Vegetable Specialist Dr. Gordon Johnson and New Castle County Extension Agents to learn more about tree and small fruit production opportunities. Learn about producing different fruits, fruit establishment, fruit management, and marketing opportunities.

Meet at the entrance to Milburn Orchards.

To register contact Carrie Murphy at 302-831-2506 or cjmurphy@udel.edu

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.

Sussex Co. Beginning Farmer Series
Fruit Production Workshop
Monday, May 23, 2016 6:00-8:00 p.m.
Ernest Fruit Farm
15092 S. Union Church Road
Ellendale, DE 19941

This workshop will hosted at the Ernest Fruit Farm by Jeremy and Emmalea Ernest. UD Fruit/Vegetable Specialist Dr. Gordon Johnson and Sussex County Agent Tracy Wootten will be on hand to lead the workshop. Learn about tree fruits and small fruits (berries, grapes) and how they grow. Other topics covered will include opportunities for producing fruits on small farms, fruit establishment, fruit management, fruit pests (diseases, insects), fruit harvesting and handling, and local marketing of fruits.

To register contact Tracy Wootten at 302-856-7303 or wootten@udel.edu. 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.

Season Extension Workshop and Field Day

Friday May, 20, 2016 10:00 a.m. - 3:30 p.m.
Delaware State University
Smyrna Outreach & Research Center (SORC)
884 Smyrna-Leipsic Road, Smyrna, DE

Presented by DSU Cooperative Extension, Small Farms Program.

The focus of the workshop is spring, fall and overwintered vegetables, fruits and herbs; the EQIP Program and high tunnels; and farmers' perspective on high tunnel production.

SPEAKERS

Growing the Best Tomatoes, Peppers and Cucumbers Ever
Steve Bogash, Penn State Extension

Increasing the Availability of Delaware's Specialty Crops through High Tunnels
Gordon Johnson, University of Delaware

The State of High Tunnel Production in Delaware
Rose Ogutu, Delaware State University

RSVP by May, 16, 2016. To register for the free workshop or for more information, call Rose Ogutu at (302) 587-6397 or email rogutu@desu.edu

UD Small Grains Field Day

Thursday, May 26, 2016 3:00 - 5:00 p.m.
University of Delaware
Warrington Irrigation Research Farm
Harbeson, DE

Join University of Delaware Cooperative Extension Specialists and Agents at the Warrington Irrigation Research Farm for a Small Grains Field Day.

Tour plots that include: Various wheat irrigation strategies, foliar fungicide programs in wheat, irrigated and non-irrigated high input wheat that includes multiple fungicide application timings and Palisade® plant growth regulator, and wheat planted in 7.5 in. and 15 in. rows.

Other topics covered include: Extension IPM Project Update: Fall aphid management in small grains related to barley yellow dwarf management, resistant weeds and some herbicide options, and integrated management of Fusarium head blight; spring insect management update in small grains (aphids, cereal leaf beetle, grass sawflies and armyworms), small grain weed control, fall soil nitrate testing, and update on variety trial disease ratings.

Directions: Harbeson Rd (Rt. 5) 4 miles south of Rt. 9 in Harbeson, DE at the intersection of Hurdle Ditch Rd and Payline Dr. Signs will be posted.

Credits: (1) DE Nutrient Management, (1) DE Pesticide, CCA offered

2016 Horticulture Short Courses

For the complete list of 2016 courses go to:
http://extension.udel.edu/lawngarden/commercial-horticulture/2016-horticulture-short-courses/

Pest and Beneficial Insect Walks
June 8 4:00 -6:00 p.m.
Sussex County Extension Office
16483 County Seat Highway, Georgetown, DE

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

OR

June 22 4:00 -6:00 p.m.
University of Delaware Botanic Gardens
531 S College Avenue, Newark, DE
(Meet at the entrance to Fischer Greenhouse.)

Register with Carrie Murphy (302) 831-2506 or cjmurphy@udel.edu.

Cost: $15
Credits: 2 Pest., 2 ISA,1 CNP
Learn to identify insect and disease pests, as well as beneficial insects in the landscape at either the Sussex County Extension Office or the University of Delaware Botanic Gardens. Instructors: Nancy Gregory, Brian Kunkel, Carrie Murphy, Tracy Wootten, and Megan Pleasanton

Maryland Grape Growers Association and University of Maryland Summer Field Day

Saturday, July 16, 2016 8:30 a.m. - 5:00 p.m.
The Vineyards at Dodon
391 Dodon Road
Davidsonville, MD 21035

AGENDA

8:30 - 9:00: **Registration**
Coffee, juice, and doughnuts provided.

9:00 - 9:30: **Welcome and Introductions**
Announcements from MGGA and Overview of The Vineyards at Dodon
Tom Croghan

9:30 – 11:00 **Grape IV**
Integrated vineyard management includes assessing the vineyard for current conditions, including canopy management, nutrition, crop level, diseases, and other pests. This session will be in the vineyard, so please bring your hat, sunscreen and sunglasses.
Dr. Joe Fiola, UME and Dr. Cassandra Swett, UMD

11:00 – 11:15 **Break**

11:15 – 12:00 **Ground Cover Management for Sustainable Grape Production**
Dr. Michela Centinari, Assistant Professor of Viticulture, Penn State University*

12:00 - 1:00: **LUNCH**
Bring your own lunch, favorite beverage, and your own lawn chair for seating.

1:00 – 1:45: **Frost and Frost Control in the Vineyard**
Dr. Centinari, PSU*

1:45 – 2:45 **Tasting of Regional R&D Wines**
Dr. Joe Fiola, UME

2:45 – 3:00: **Break**

3:00 – 4:00: **Sustainable Viticulture Workbook**
Dr. Joe Fiola, UME

4:00 – 5:00 **Winery Tour**

*Dr. Michela Centinari, is an Assistant Professor of Viticulture for Penn State University. Dr. Centinari's research and extension program integrates both basic and applied aspects of grapevine physiology to improve production and quality. She specializes in vineyard floor management and understanding and managing winter and frost/freeze damage.

Private & Commercial Pesticide Applicator Recertification Credits for this event are pending

Register online at: www.marylandgrapes.org.
Discounted registration until May 30.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of May 5 to May 11, 2016

Readings Taken from Midnight to Midnight

Rainfall:

0.66 inch: May 6
0.01 inch: May 7
0.01 inch: May 9
0.37 inch: May 11

Air Temperature:

Highs ranged from 72°F on May 8 to 52˚F on May 6.

Lows ranged from 52˚F on May 10 to 43˚F on May 9.

Soil Temperature:

60.3˚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, Associate Scientist – Vegetable Crops