Vegetable Crop Insect Update
By Joanne Whalen
DE Extension IPM Specialist
jwhalen@udel.edu

Lima Beans
Continue to sample for mites since early detection is necessary to achieve effective control. Labeled products include bifenazate (Acramite), bifenthrin (numerous generics labeled), dimethoate, Hero (combination of bifenthrin and zeta-cypermethrin), and recently labeled Agri-Mek SC (reminder — this is the only labeled formulation). Be sure to read all labels carefully for all restrictions including but not limited minimum gallonage needed by air, days between applications, pre-harvest intervals, and adjuvants requirements that must be followed to avoid illegal residues. We are starting to see an increase in stinkbug and plant bug populations. As soon as pin pods are present, be sure to watch carefully for plant bug and stinkbug adults and nymphs. As a general guideline, treatment should be considered for lygus if you find 15 adults and/or nymphs per 50 sweeps. For stink bugs, the threshold should be reduced by one half.

Melons
Continue to scout all melons for aphids, cucumber beetles, and spider mites. Although aphid populations still remain low in most fields, we are starting to see localized infestations. At this time of year, early detection is critical since populations can quickly explode. It is also the time of year to start watching for caterpillars that feed on rinds which can include beet armyworm, yellow striped armyworm, and cabbage looper larvae. If beet armyworm is in the mix, it is important to select a material that is effective on this insect (refer to the Commercial Vegetable Recommendations) - the pyrethroids do not provide effective control. Be sure to read all labels carefully for pollinator protection statements, rates and restrictions. Some materials are restricted to only one application as well as ground application only.

Peppers
Depending on local corn borer trap catches, sprays should be applied on a 7 to 10-day schedule once pepper fruit is ¼ – ½ inch in diameter. At this time, you will also need to consider a treatment for pepper maggot.

Snap Beans
Depending on local trap catches, sprays may be needed at the bud and pin stages on processing beans for corn borer control. As earworm trap catches increase, an earworm spray may also be needed at the pin stage. You will need to check our website for the most recent trap catches to help decide on the spray interval between the pin stage and harvest for processing snap beans. Once pin pods are present on fresh market snap beans, a 7 to 10-day schedule should be maintained for corn borer and corn earworm control. http://agdev.anr.udel.edu/trap/trap.php

Sweet Corn
Continue to sample all fields through pre-tassel stage for whorl feeders (corn borer, corn earworm and fall armyworm). A treatment should be applied if 12-15% of the plants are infested with larvae (regardless of the species). The predominant whorl feeding being found at this time is the fall armyworm. Since fall armyworm (FAW) feed deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control. FAW can also be a problem in silk stage sweet corn, especially in outbreak years. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible.
IPM Threshold Guide for Vegetable Crops
ECONOMIC THRESHOLD - Level of pest activity when control action is suggested to prevent economic injury Online at:

Commercial 2016 Vegetable Production Recommendations Maryland EB 236

On-Line at:

Vegetable Disease Update
By Kate Everts
Vegetable Pathologist
University of Delaware and University of Maryland
keverts@umd.edu

Downy mildew on cucumber is now present in Sussex County, Delaware and in Cumberland County, New Jersey.

Several additional late blight outbreaks were confirmed in Maryland over the past week. Late blight is active in Queen Anne’s County, Dorchester County, and Somerset County, MD on the eastern shore. Garrett and St. Mary’s counties also have late blight outbreaks. Local rains continue to make our weather favorable, despite an increase in temperatures.

The pathogen genotype that has been identified in all these outbreaks is US-23. The US-23 genotype can cause disease on both potato and tomato and is sensitive to mefenoxam (the active ingredient in Ridomil). Therefore, in addition to the fungicides that are listed in the commercial recommendation guide as effective (http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/), Ridomil products that are labeled for use on potato and tomato late blight can be used. Powdery mildew on cucurbits (squash, cucumber, pumpkin, etc.) is now present on Delmarva. Scout your fields for the presence powdery mildew. The threshold is one lesion per 50 old leaves. Once the threshold is reached in your field, targeted fungicides for powdery mildew management should be added to spray programs. Organic producers can apply fungicides that are approved by your certifying agent such as Cueva and Regalia.

Potato Late Blight Disease Advisory
By Kate Everts
Vegetable Pathologist
University of Delaware and University of Maryland
keverts@umd.edu

July 20, 2016

Late blight forecasts are being generated for eight locations across Maryland based on the Cornell Decision Support System (DSS). The 50% emergence date was estimated to be May 4 for Mechanicsville; May 11 at Hurlock, Owings, Clinton, Severn, Dickerson and Freeland; and May 18 in Oakland. Once the first fungicide is applied, subsequent late blight sprays should be applied when 7 additional DSV’s have accumulated.

Below is a chart showing the number of DSV accumulated since 50% crop emergence at the eight locations. Late blight has been confirmed in Garrett, St. Mary’s, Somerset, Dorchester, and Queen Anne’s County the week of July 5th. I recommend that all growers in Maryland apply a late blight fungicide such as Curzate, Forum, Gavel, Omega, Presidio, Previcur Flex, Ranman, Revus, Super Tin, Tanos or Zing! If the product does not contain a protectant fungicide, add a protectant to the tank mix. Additional information is in the 2016 Commercial Vegetable Recommendation Guide http://extension.umd.edu/mdvegetables/2016-commercialvegetable-production-recommendations-eb-137
Organic growers should apply an appropriate copper fungicide. For updates on where late blight is occurring in the USA, go to www.usablight.org. Any suspicious samples can be sent to the UM Plant Diagnostic Clinic or dropped off at your local Extension office. 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 2016 Commercial Vegetable Production Recommendations, Maryland http://extension.umd.edu/mdvegetables/2016-commercial-vegetable-production-recommendations-eb-137

<table>
<thead>
<tr>
<th>Date</th>
<th>Harlock</th>
<th>Mechanicsville</th>
<th>Owings</th>
<th>Clinton</th>
<th>Severn</th>
<th>Dickerson</th>
<th>Frederick</th>
<th>Oakland</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 6</td>
<td>0</td>
<td>64</td>
<td>2</td>
<td>109</td>
<td>1</td>
<td>81</td>
<td>1</td>
<td>78</td>
</tr>
<tr>
<td>July 7-8</td>
<td>2</td>
<td>66</td>
<td>1</td>
<td>110</td>
<td>1</td>
<td>80</td>
<td>1</td>
<td>79</td>
</tr>
<tr>
<td>July 9-11</td>
<td>1</td>
<td>67</td>
<td>1</td>
<td>111</td>
<td>1</td>
<td>80</td>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>July 12-13</td>
<td>2</td>
<td>69</td>
<td>3</td>
<td>114</td>
<td>1</td>
<td>81</td>
<td>1</td>
<td>81</td>
</tr>
<tr>
<td>July 14-20</td>
<td>8</td>
<td>77</td>
<td>3</td>
<td>117</td>
<td>7</td>
<td>88</td>
<td>7</td>
<td>88</td>
</tr>
</tbody>
</table>

Catfacing Problems in Tomato
By Jerry Brust
IPM Vegetable Specialist, UME

There have been some reports from growers and educators of several sets of tomato fruit with catfacing or that are deformed (fig 1). Catfacing results in fruit with deep indentations in the blossom end or fruit with significant distortions. It is thought to be caused by a problem during the formation of the flower that results in the fruit not developing normally. However, there is little information as to its exact cause. At times the first set of tomatoes in fields looked good, but the second, third and in some cases 4th sets are having problems in some fields. The problem is most probably due to the cool night temperatures we had 20-30 days ago in some areas. Tomato flowers do not develop or pollinate properly if temperatures fall below 52-54°F. This is just the nighttime temperatures; the day time temperatures could be in the 80s, but night temperatures at or below 54°F will cause the fruit to develop abnormally. At several places on the eastern shore, where the damage seems to be worse, low temperatures were at or below 54° F from 1 May through the 25 May. This extended period of cool night temperatures is just the scenario that is needed for catfacing to occur over several tomato fruit sets. These temperatures are from official reporting sites and can be lower or higher depending on your location. Some varieties will be more sensitive to these lower temperatures than others. It seems the ‘rounder and larger’ the fruit the greater the chance of catfacing. So in the same field that has several cultivars of round tomatoes that have catfacing the plum tomatoes would have less and the cherries and grapes much less if any.

Other causes of catfacing could be exposure to 2, 4-D and you should see a pattern in the field if this is the case with one edge of the field with more damage and as you move away from that edge there is less damage. Heavy pruning in indeterminate varieties may increase catfacing because of reductions in auxins in the plant. Jointless tomato varieties seem to be more prone to catfacing than jointed varieties. Zippering fruit have lines along the side of the fruit usually from the stem end to the blossom end (fig 1) due to abnormalities in early flower development. At times a “hole” forms on the side of the fruit along the zipper (fig 1). Although sometimes attributed to high humidity or an anther that is attached to the newly forming fruit the cause of the zipper scar is still not well understood.

Unfortunately there is little that can be done to control either of these maladies, except selecting varieties that are not prone to the problem. Older cultivars appear to be more susceptible. If possible removal of the catfaced fruit would be beneficial as these fruit are unmarketable, but will continue to drain nutrients from the plant.
Mid-Season (June-July)

- Brown Marmorated Stink Bug (BMSB) - Part 1
- Brown Marmorated Stink Bug (BMSB) - Part 2
- Crop Estimation
- Crop Management
- Disease Management - Botrytis
- Drought Stress, Vine Performance, and Grape Quality
- Grape Berry Moth
- Hail Damage
- Japanese Beetles
- Mid-Season Disease Management

Crop Estimation

By Joe Fiola
Extension Specialist
Viticulture and Small Fruit, University of Maryland
jfiola@umd.edu

I often hear experienced growers say that they were caught by surprise that their crop was either much less than or much greater than anticipated. Many grape growers do not use a formal method of estimating their crop yield - what appears on the vine is what is harvested. An important role of running an efficient business is to know your inventory. In the case of a winery, that is the quantity of grapes that you have on the vine and how that relates to the quantity of grapes that you need to achieve your wine production goals. In the case of a vineyard, that is the quantity of grapes that you will have available to sell to a winery.

The second aspect crop estimation is to be able to control or adjust it to where you want it to be for quality. Crop adjustment, target yield, and fruit thinning will be the subject of future "Timely Viticulture." – here we will concentrate on crop estimation.

Viticulture researchers have developed accurate systems for predicting yields. One is based on cluster weights during "lag phase" which is the period when the growth of berries slows temporarily (typically about 55 days after first bloom). The other traditional method is based on a running historical record of cluster weights for that variety block. In both cases, good results depend largely on the grower’s ability to provide accurate cluster/vine and vine/acre information. It is important to be able to predict your vineyard yields. Develop a system that works for you and your vineyard and use it every year.

- Lag phase crop estimating is based on the premise that cluster weights will double from lag phase to harvest.
  - Regrettably this multiplier is not a fixed number and may vary by variety, clone and seasonal variation (wet/dry).
  - The system works best when a historical record of lag and harvest weights have been collected.
  - An intuitive sense of berry and cluster size gained by experience will assist the grower in improving the accuracy of the estimate.
  - This method has not proven effective for estimating yields on young vines.

- To perform a lag phase estimate, a grower will need the following information:
  - Number of bearing vines per field/variety
    - count actual number of vines
  - select a “random sample area” (e.g. 5% of field/variety), count the vines in that area, and multiply by the appropriate number (e.g. 20).
  - Number of clusters per vine;
    - select a “random sample area” (e.g. 20 “representative” vines), count the clusters in that area, and multiply by the appropriate number (e.g. 30 if 600 actual vines per acre)
  - measure the cluster weight at lag phase
    - weight a sample of clusters during the lag phase (typically about 55 days after first bloom).
  - Plug into the formula:
    Estimated pounds/variety = vines/variety x clusters/vine x average final harvest clustwt x 2.

- Another, more traditional method of crop prediction relies heavily on the availability of harvest cluster weight data.
  - The advantage to this formula is it can be employed any time after clusters can be counted.
  - However, it will not take into account any annual variations in cluster development.

- To perform a this crop estimate, a grower will need the following information:
  - Number of bearing vines per field/variety – as above;
  - Number of clusters per vine – as above;
  - Historical average weight of clusters at harvest
  - Plug into the formula:
    Pounds/variety = vines/variety x clusters/vine x average final harvest clustwt (lbs)

Collecting this data now will help you to get a feel for where your production currently is in the vineyard so you can compare it to your “target yield.” You will then be ready for crop thinning, if necessary, at the appropriate time.
Food Safety – A Critical Concern for All Fresh Produce Growers

By Gordon Johnson,
DE Extension Vegetable & Fruit Specialist;
gcjohn@udel.edu

There is increased concern with food safety and fresh produce. The FDA, State Health Departments, and State Departments of Agriculture have made food safety a priority, especially for important produce growing regions such as Delmarva. Produce buyers are increasingly seeking to control risk by monitoring the food safety programs of growers that they buy from. In addition, new FDA regulations will require that specific food safety areas be addressed by fresh produce growers.

All fresh produce growers from small to large should implement Good Agricultural Practices (GAPs) for produce food safety on their farms. The following are points that all produce growers need to consider to protect their markets and address food safety proactively:

- All produce farms should have a written food safety plan that spells out how food safety will be addressed. The plan should cover field and packing operations and address water applied to crops, soil amendments, wildlife, harvest sanitation, packing sanitation, and worker hygiene.
- All fresh produce growers should attend training in Good Agricultural Practices and stay current by attending update sessions or advanced training each year.
- Produce growers should be aware of the pathogens of concern and how to reduce the risk of produce contamination. For example, the southern part of Delmarva historically has had reservoir of Salmonella in the environment that needs to be addressed in food safety planning on produce farms in that area.
- Growers should evaluate risks specific to their operations and farms and address those risks before growing and packing produce.

Because Salmonella is of particular concern in our region, special emphasis should place on addressing risks from this food borne pathogen. The following are some guidelines to reduce the risk from Salmonella (as well as other food borne pathogens):

- Be familiar with your water source by developing a water quality profile (testing program; FDA standards)
- Avoid using surface water for irrigation. Salmonella has been shown to survive for long periods in sediments. If surface water must be used, treatment should be considered (chlorine or peroxyacetic acid). Additionally, use screens and locate the intake far off the bottom to minimize sediment intake with surface water by pumps. Use back flow devices when refilling ponds with well water
- Use wells that are away from possible sources of contamination (such as poultry houses, manure storage structures). New wells for irrigating fresh produce should be located with food safety in mind.
- Do not use raw manures/litters in the season fresh produce is to be grown, particularly with high-risk produce such as leafy greens, netted melons, tomatoes, cucumbers, or peppers. In general, the longer the time interval between application of raw manures/litters and growing produce the better.
- Wildlife may harbor Salmonella, there is an extensive range of animals that may carry Salmonella, and Salmonella may persist in animal feces. Because of this, wildlife intrusion should be monitored/scouted, being extra vigilant as the Delmarva region is a unique environment for diverse wildlife (such as waterfowl). Avoid harvesting produce in locations with visible animal feces or intrusion and make an effort to keep animals out of high risk produce fields.
- Keep high risk produce out of risk high fields such as those that are prone to flooding, animal intrusion, or in close proximity to livestock/high risk landscape features
- When field packing produce, practice good worker health and hygiene; use clean bins, boxes, containers, or packages; and keep bins/boxes off of the ground.
- In the packing area enforce a strict pest management program to eliminate contamination from pests such as rodents as well as animal intruders (raccoons, birds).
- Because Salmonella persists for longer periods on porous food contact surfaces, replace with non-porous ones.
- Produce conveyance (dump tanks, flumes) and cleaning and washing areas (conveyers, rollers, brushes, washers) are high risk for cross contamination and must be properly sanitized. Tank, flume, hydrocooler and wash water must be treated with approved antimicrobial sanitizer (chlorine, PAA).
- Food contact surfaces must be sanitized on a regular basis and considerations should be given to the frequency of cleaning breaks – more cleaning breaks reduces contamination risk.

View inks to all of the hort tips newsletters. The most recent is at the bottom of the list at: https://extension.umd.edu/hgic/home-and-garden-information-center-and-grow-it-eat-it-publications#hortTips
AG MARKETING ALERT!

Mastering Marketing - July 2016: Marketing Attitudes and Appearances – Keeping Them Positive has been posted on the web. To access the article, please click on the link below:

http://extension.umd.edu/learn/marketing-attitudes-and-appearances%E2%80%94keeping-them-positive

Ginger S. Myers
Marketing Specialist, University of Maryland Extension
Director, Maryland Rural Enterprise Development Center
VOICÉ: 301-432-2767  Extension: 338
FAX: 301-432-4089
EMAIL: gsmyers@umd.edu
WEB: http://www.extension.umd.edu/
https://www.extension.umd.edu/mredc
https://www.extension.umd.edu/agmarketing

Maryland Value Added Producer Grants for Capital Assets Now Available From MARBIDCO
Annapolis (July 7, 2016)… The Maryland Agricultural and Resource-Based Industry Development Corporation (MARBIDCO) has announced a grant incentive funding opportunity to encourage Maryland's agricultural producers to expand or diversify their business operations by installing capital assets (equipment and fixtures) to make a product that is “value added.”

Eligible applicants must be a crop or livestock producer or processor, agricultural cooperative, seafood processor, or primary or secondary timber products processor, and have been in business for a minimum of two years.

MARBIDCO will offer grants of between $2,500 and $15,000, distributed on a competitive basis, for capital projects that help farmers, forest product operations, and seafood processors to expand or diversify their business operations. The financial match required from the rural business must be at least equal to the amount requested from MARBIDCO.

The submission deadline for applicants seeking to receive Maryland Value Added Producer Grants – Capital Assets Option Program (MVAPG-CAO) grants from MARBIDCO is Tuesday, October 18, 2016; no later than 4:00 p.m. at the MARBIDCO office in Annapolis. (Applications received in the mail with a Friday, October 14, 2016, postmark will also be accepted.) Late applications will not be accepted. Grant award announcements will be made in November 2016. Further information about the MVAPG-CAO Program may also be obtained by contacting Andra Davis, MARBIDCO Financial Programs Specialist, at (410) 267-6807, or by visiting MARBIDCO’s website at www.marbidco.org/business/mvapg_cao.

“Lettuce” Celebrate Buy Local Week
Spread the word about the Maryland Buy Local Challenge during ‘Buy Local Week,’ July 23-31! Remind your customers to eat or drink one locally grown, made or harvested product every day during ‘Buy Local Week’ and make a commitment that will have a lasting impact on their lifestyle, the environment and the agricultural community.

Individuals, families and all types of businesses and organizations can take the Buy Local Challenge (BLC) pledge. The Southern Maryland Agriculture Development Commission (SMADC) has made it easy! The BLC website, buylocalchallenge.com, offers statewide ‘Buy Local Week’ resources to help your customers find locally sourced farm foods.

Share the ‘Buy Local Week’ with others on social media! Use the official BLC hashtag #buylocalchallenge on Twitter, Facebook and Instagram and check out the BLC Facebook page to find the latest Buy Local Week happenings around the state. SMADC will share your photos on their social media sites as well.

The Buy Local Challenge was created by SMADC and is promoted in partnership with Maryland Department of Agriculture.

Dear Branching Out subscriber,
A new issue of Branching Out is now available! Learn about about a new online course offering from the University of Maryland Extension, the newest Maryland Woodland Stewards, and the threat of feral hogs in Maryland, along with regular features Woodland Wildlife Spotlight, Invasives in Your Woodland, and the Brain Tickler.

Branching Out Vol. 24, No. 2  Summer 2016 URL:
You can review past issues of Branching Out by visiting:
http://extension.umd.edu/publication-series/branching-out

Andrew A. Kling
Agent Associate
University of Maryland Extension
Western Maryland Research & Education Center
18330 Keedysville Road, Keedysville MD 21756
301 432-2767 x307
akling1@umd.edu
Agriculture Secretary Vilsack Proclaims August 7-13 "National Farmers Market Week"

WASHINGTON, July 11, 2016 - Agriculture Secretary Tom Vilsack today signed a proclamation declaring Aug. 7-13, 2016, as "National Farmers Market Week." This year marks the 17th annual National Farmers Market Week to honor and celebrate the important role that farmers markets play in local economies.

Throughout the week, USDA officials will celebrate at farmers market locations across the country. On Saturday, Aug. 6, Elanor Starmer, the Administrator of USDA's Agricultural Marketing Service (AMS) - which conducts research, provides technical assistance, and awards grants to support local and regional food systems - will kick off the week visiting a farmers market and wrap up the week at USDA's own farmers market in Washington, D.C., on Friday, Aug. 12.

"Farmers markets are a gathering place where you can buy locally produced food, and at the same time, get to know the farmer and story behind the food you purchase," said Administrator Starmer. "These types of markets improve earning potential for farmers and ranchers, building stronger community ties and access to local foods."

To help farmers market managers across the country promote and celebrate National Farmers Market Week, USDA is sharing online free farmers market related graphics that market managers and others can use to customize posters, emails, websites and other promotional materials. The graphics, along with a short demonstration video, can be found at: www.ams.usda.gov/resources/NFMW

Over the course of the Obama Administration, USDA has invested close to $1 billion in 40,000 local food businesses and infrastructure projects. Farmers markets provide consumers with fresh, affordable, convenient, and healthy products from local producers. With support from USDA, more farmers markets offer customers the opportunity to make purchases with the Supplemental Nutrition Assistance Program; the Women, Infants, and Children Nutrition Program; and the Senior Farmers' Market Nutrition Programs.

Supporting farmers markets is a part of the USDA's Know Your Farmer, Know Your Food (KYF2) Initiative, which coordinates the Department's work to develop strong local and regional food systems. USDA is committed to helping farmers, ranchers, and businesses access the growing market for local and regional foods, which was valued at $12 billion in 2014 according to industry estimates.
PRINCESS ANNE, MD – (June 29, 2016) – A select number of innovative and successful small farm operations in Northern and Central Virginia have been identified for inclusion in the 2016 “Explore New Farm Income Opportunities” bus tour. The two-day excursion, beginning Monday, August 8, is presented by the UMES Small Farm Outreach Initiative and includes an overnight stay, educational materials, and lunch for both days.

Tour participants will meet in the Bowie Comfort Inn parking lot and depart for the tour at 8:00 a.m. sharp on Monday, August 8. With each stop, participants will get an overview of what services and/or products each farming venture offers as well as a birds-eye view of the agricultural practices that make them successful. Major topics of discussion will be centered on direct marketing, value-added products, agri-tourism, specialty “niche” crops, sustainable farming practices, woodland opportunities, natural resource conservation and more. The tour will end at the Bowie Comfort Inn parking lot around 6:30 p.m. on Tuesday, August 9.

The registration fee is $90 per person for single private accommodation or $70 per person for double accommodation. To register online, visit: 2016smallfarmbustour.eventbrite.com

All registrations and payments must be received by Wednesday, August 3. Early registration is recommended, as space is limited to 40 participants. For more information about select tour stops during the “Exploring New Farm Income Opportunities” bus tour or the Small Farm Outreach Initiative, contact Barren Rogers at 410-651-6070 or 6693 or Candy Hefel, farm management agent, at 443-944-5254.

Vegetable & Fruit News
A timely publication for the commercial vegetable and fruit industry available electronically in 2016 from April through October on the following dates: May 13; June 9; July 21; August 18; September 8; and October 20.

Published by the University of Maryland Extension Focus Teams 1) Agriculture and Food Systems; and 2) Environment and Natural Resources.

Submit Articles to:
Editor,
R. David Myers, Extension Educator
Agriculture and Natural Resources
97 Dairy Lane
Gambrills, MD 21054
410 222-3906
myersrd@umd.edu

Note: Registered Trade Mark® Products, Manufacturers, or Companies mentioned within this newsletter are not to be considered as sole endorsements. The information has been provided for educational purposes only.