Vegetable Crop Insects

By Joanne Whalen
DE Extension IPM Specialist
jwhalen@udel.edu

Cole Crops
As soon as plants are set in the field, be sure to sample for cabbage looper and diamondback larvae. A treatment will be needed before larvae move into the hearts of the plants. We are also starting to see the first Harlequin bugs in cole crops, especially kale. In general, most of the “worm” materials are not effective on Harlequin bugs. The pyrethroids have provided control in years past.

Lima Beans
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 if you find 15 adults and/or nymphs per 50 sweeps. Also be sure to begin sampling the earliest planted fields for corn earworm. A treatment will be needed for corn earworm if you find one corn earworm larvae per 6 foot-of-row.

Melons
Continue to scout all melons for aphids, cucumber beetles, and spider mites. We continue to see an increase in aphid populations as well see rind feeding from cucumber beetle adults and a variety of caterpillars. 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 Production Recommendations) – the pyrethroids do not provide effective control.

Peppers
Depending on local trap catches, sprays should be applied on a 7 to 10-day schedule once pepper fruit is ¼ – ½ inch in diameter. You will also need to consider a treatment for pepper maggot. Be sure to also watch carefully for beet armyworm larvae since they can quickly defoliate plants. In addition, be sure to use a material that provides beet armyworm control – the pyrethroids have not provided control of this insect in past years.

Snap Beans
You will need to consider a treatment for corn borer and corn earworm populations in processing and fresh market snap beans. Sprays are 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. 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.

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 feeder continues to be 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 as soon as ear shanks are visible.

Maryland SWD Update

By Bryan Butler
Carroll County Extension Agent & Mid-Maryland Tree Fruit Agent
University of Maryland Extension
bbutters@umd.edu

Since its initial discovery in a Maryland in 2011, Spotted Wing Drosophila (SWD) has quickly spread throughout most of the state and populations have increased. Monitoring with clear plastic traps baited with apple cider vinegar (ACV) alone or with ACV and red wine gave us first detections of low levels of this pest as tart cherry harvest was completing – or around July 10. Fruit surveys from last season from many different small fruit and tree fruit crops at over 100 locations found that strawberries were not at risk from SWD nor were cherries picked at normal timing, but late
harvested cherries in a U-Pick operation did have larvae in the fruit. With the cold winter last season, we are expecting a higher than normal winter mortality, and hopefully a later than usual emergence of SWD. To aid us and growers in monitoring SWD, Trece has developed a much improved 2-part lure that is just as effective as the yeast baits, but not nearly as messy or nasty smelling. Much more effective than the ACV bait alone, we are testing it suspended over ACV as the killing and preserving fluid at about 60 locations in Pennsylvania and Maryland this season. The lure which is supposed last for 4 weeks is also better at attracting female flies earlier in the season than ACV alone and should give us more lead time in timing sprays. We purchased our Trece SWD Dry Lures from Great Lakes IPM in Vestaburg, MI. We will continue to monitor our traps all season and report our catches in real time to better inform growers when to spray. Trapping with these commercial lures and using commercial or home-made deli cup traps will of course give you better information on the abundance and timing of SWD on your own farm. Traditionally blackberries and last season raspberries have been the favorite crop and growers would be advised run their own traps or to keep following our trapping numbers for timing sprays and recommendations on which insecticides to use.

Biddingger, Butler, & Demchak

### 2014 Mean # of SWD Captures (# Traps) in MD Orchards

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<tr>
<th>Month</th>
<th>Mean SWD Sweet Cherry (4)</th>
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A number of pumpkin fields in Maryland have a great deal of virus infected plants (20-50%) while other pumpkin fields have none. Why the large differences in infection levels? This is something I have been looking at for the past two seasons. It has to do with what is around the pumpkin field and how long pumpkins and squash have been growing in the general area. I'll have more on the results of this study at this year's winter vegetable meetings. Almost all of the viruses found so far have been Watermelon mosaic virus-2 (WMV), with a small percentage being Zucchini yellow mosaic virus (ZYMV). The most common symptoms caused by these viruses are a leaf mosaic (variegated patterns of dark and light green to yellow that form a mosaic) and leaf distortion (fig 1). Symptoms may vary from plant to plant according to the species or varieties, viral concentration in the plant, timing of infection, single or mixed infection, or temperature. External symptoms may develop within four or five days after young plants become infected, but may take up to 14 days to develop when the foliage is older and more mature. Symptoms develop more rapidly at 80°- 90°F than at 65°-75°F. Virus symptoms are more severe on plants exposed to short days or reduced light than on plants exposed to long days and bright light. Cucurbit plants rarely become infected in the seedling stage. When this does happen, the cotyledons may turn yellow and wilt. New leaves are slightly mottled a yellowish green and remain small, wrinkled, and distorted.

Typically, viruses affect pumpkin fruit by causing lumps, bumps and rings to appear on the skin of the fruit. However, at times there is little loss if the pumpkin fruit has been pollinated and begins to grow before virus infection occurs (fig 2). Figure 2 shows a pumpkin plant with a new WMV infection, the larger pumpkin fruit will develop normally, but the smaller fruit just pollinated will not develop at all and will be aborted by the plant. Infection just after pollination may cause the pumpkin fruit to have blotches or stripes of green or yellow color. If the plant is infected before pollination there usually is no fruit production, but if some are produced then symptoms on the fruit include surface discoloration, bumps and other fruit deformity, early browning, shrinking or death, small fruit size and poor yields. Secondary infection by other microorganisms may occur on the virus infected fruits and cause soft rot.

On pumpkin plants, viruses can either infect the plant alone or together. If a plant is infected by only one virus, the symptoms generally are milder (fig 3) than if by two or more (fig 4). Infection by two viruses initially
causes a strong mosaic and distortion of leaves. Infected plants have smaller and smaller new leaves. Late stage infections consist of leaves that turn yellow or become scorched along the edge.

One thing that is new or at least different is severe distortions or deformities of the plant by infection with WMV (figs 5 and 6). Normally this virus, if it is the only virus in the plant results in mild mottling symptoms on the plant (fig 1). However, pumpkin plants I have seen in fields with severe deformities had only WMV detected in them. This is problematic as WMV is the most common pumpkin virus in our area, if this “strain” (I am calling it that because I am not sure what else to call it) becomes common then yields of pumpkin could be reduced by 20-35% each year. This 'strain' of WMV also has been found in Utah.

Aphids transmit viruses to plants through their sucking mouthparts. Viruses that are non-persistently transmitted, as are most pumpkin viruses are difficult to manage because the aphids acquire and transmit the viruses so quickly. The acquisition or transmission of non-persistently transmitted (NPT) viruses is completed in a matter of seconds or minutes. NPT viruses cannot spread very far from where they were originally acquired by the aphid. Pesticides sprayed on the plant will eventually kill the aphids, but too late to stop them from transmitting the virus. Therefore, insecticides have little effect on initial infection rates of NPT viruses transmitted by transient, non-colonizing aphids (these are aphids that are passing through the field, land on and taste the pumpkin plant, do not like it and move on, but they have transmitted the virus). Insecticides can control direct feeding damage by aphids, honeypdew production and secondary spread of viruses in the field.
The Plight of Clint and his Monoculture Practices
Matthew Bisk, Lauren G. Hunt & Cerruti R Hooks
1 SESYNC intern, # Graduate student and Professor and Extension Specialist, University of Maryland, Department of Entomology

The dark, gloomy sky seemed to mirror Clint’s mood as he stood before his barren field. The eggplant harvest had just been completed, but the usual joy and feeling of success after the completion of a hard growing season was absent. This year’s yield was at an all-time low, and may have been more displeasing if not for hefty doses of pesticide and fertilizer. Despite the realization that costly inputs did not result in a more lucrative crop, Clint tried to ignore the fact that the net profit he turned this season would not come close to the modest prediction he made at the season’s beginning. The knot deep in his stomach tightened; worsened by results of a soil test that had recently arrived indicating that his soil was of poor quality and health. In fact, Clint knew that if this trend continued, his land may not be farmable within the next decade. Clint had heard from the SESYNC intern (Matt Bisk), city girl (Nicole Rusconi) and graduate student (Lauren “White Wave” Hunt) that crop rotation and plant diversification was the key, but Clint never listened to them and it seems that years of rotating two similar plants, eggplant and pepper and applying high chemical inputs had worn out his land. Everything was at stake. What was he to do? Were there any other farming methods that could increase production while improving soil quality and health? Where should he begin to reverse this trend? Should he text Matt and ask for help?

Clint’s plight may become a reality for other farmers if the persistent use of monocultures and high chemical inputs are the norm. Monoculture plantings in which a single crop is planted consistently on the same land year after year may negatively impact the overall health of the farm and subsequently lower crop productivity and profits. Crop lands must be properly managed to maintain soil quality and health. Soil health may be measured by the diversity of organisms below the soil; and exposing soil microbes to roots of similar crops year after year reduces their diversity while promoting the establishment of soil-borne pathogens specific to that crop. Bacterial diversity has been found to decrease in soils with constant monoculture plantings, while properly managed rotated fields show bacterial diversity that more closely resembles that of natural grasslands. The initial response to lower yields may be similar to Clint’s, which includes applying high input pesticide and fertilizer. An overabundant supply of fertilizer cannot be used by plants and the excess may enter in surface or groundwater and reduce water quality.

Continuous monoculture plantings are not only more susceptible to pathogens, but insect pest outbreaks can occur when field sites are exposed to similar crops year after year. This generally results in greater pesticide use, which may adversely affect the ability of non-target organisms to complete ecosystem services such as pollination. In light of these problems, growers worldwide may need to apply more sustainable production tactics such as using mixed plant species and beneficial (companion) plants within their cash crop system. Companion planting, a practice utilized for centuries by indigenous populations across the globe, has yet to be adopted on a large scale in modern agriculture (Figs. 1 and 2). Often referred to as intercropping when grown between crop rows, these plants can provide nutritional and structural support and help battle pests. This leads to potential increases in crop yield, quality and overall productivity with less chemical intervention. In a study involving intercropped systems of sorghum and a legume, intercropping produced a 63% increase in grain yield along with an 88% increase in plant height. In addition, intercropped plots had 89 and 85% reductions in weed emergence and pest damage, respectively, compared to monocropped plots. Diverse plant communities lead to greater biodiversity which subsequently creates a more natural ecosystem with greater stability and resilience.

![Figure 1. Yellow tree foil/white clover intercropping (From Cotswold Seeds)](image1)

![Figure 2. Taro and Corn Intercropping (From Biodiversity Conservation Blog at the Australian National University)](image2)
Monoculture plantings are known to be more susceptible to failure from natural causes, such as the Southern Corn Leaf Blight Epidemic in the US in 1970. This pathogen cost growers over one billion dollars in losses with recorded losses of 80-100% in their fields. A more recent threat to crops, citrus canker which affects oranges, limes and grape fruits, caused the death of millions of trees in Florida shortly after 2000. Plum pox virus wiped out almost 1,000 acres of stone fruit producing trees in Pennsylvania and has been detected in several other North American regions. An intercropped system involving two cash crops lowers the financial risk associated with disaster and may provide growers a fallback in case one crop is lost. Thus, intercropping can better ensure longevity and put growers at greater ease in the face of potential catastrophe.

Deciding on the proper combination of crop and companion plant is challenging and requires careful consideration of multiple factors, perhaps none more important than plant biology. Plant features can be crucial when choosing a companion plant system. Traits such as leaf structure, pollen or nectar production, presence of wax, flower size, structure, and color influence the interactions between pests and their natural enemies. To choose the best combination, one must familiarize themselves with the main crop, companion plant and associated arthropod fauna. For example, some plants emit chemicals that repel certain pests and/or attract beneficials. A combination of plants can be used in the “push-pull” method, where one plant repels a pest from the field while another draws them to the periphery (Fig. 3). In other instances, companion plants may draw pests away from a crop (known as a trap crop) while attracting their natural enemies (known as an insectary plant). Some systems such as a lettuce and alyssum intercropping used to manage aphids have equaled or exceeded the amount of pest suppression offered by pesticides.

Using a companion plant as a physical barrier can reduce pest colonization, serve as a windbreak, or provide other services that directly benefit cash crop growth and productivity (Fig. 4). To develop the appropriate planting schedule, growth patterns of the cash crop and companion plant should be coordinated. Other growth factors such as depth of root exploitation, nutrient affinities, water demand and nutritional requirements should be considered also. The key is identifying companion plants that will optimize the cash crop’s utilization of environmental resources (Fig 5). For example, maize and cereal grains will mature at similar times and compete for resources, which may lower quality and size of the crop plant. Nitrogen fixed by leguminous plants can provide a nutritional boost to cash crops and subsequently replace or supplement their fertility needs. The legume *Leucaena* improved soil water retention and served as a sufficient substitute for nitrogen fertilizer when intercropped with maize and wheat. Indeed, carefully choosing a companion plant can go a long way in reducing pest colonization, attracting natural enemies and aiding cash crop growth.

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**Figure 3.** Example of the “Push-Pull Technique” (From Push-Pull.net)

**Figure 4.** Secondary Plant serving as a pest barrier (From agLe@rn.net)

**Figure 5.** Companion Planting Combinations (From Garden365.com)
Hearing about the world of companion planting offered Clint new hope and helped loosen the knot in his stomach. He promised himself that he would institute a better crop rotation scheme and find the right companion plants to diversify and ultimately convert his farm into a well-functioning agricultural ecosystem. However, Clint has some important, lingering questions. What would be the economic toll to maintain additional plants in his field? How could he determine the best layout for intercropping to maximize production? How much extra labor would be required? Could he even afford the initial startup cost? Would the benefits of intercropping outweigh the potential risks? What will he plant in addition to peppers and eggplant? Who will Clint call on to help him revise his farm? Will it be Matt, the former stuntman of Jersey Shore who traded in his beachwear for a thinking cap; Nicole, a lover of eggplant, energy drinks and fast utility vehicles or Lauren G., who lives on the edge by mixing the flavors of her coffee beans?

Lucky for Clint, University of MD researcher Cerruti R² Hooks is looking for farmer participants in 2015 who are interested in instituting more sustainable and IPM (Integrated Pest Management) friendly tactics on their vegetable farms. However, he understands that the concerns of other farmers may differ from Clint’s. Thus, if you have a production idea that you think will make life easier on your farm and would like to test it, please contact Cerruti at crrhooks@umd.edu. He is willing to cover the cost of supplies, help you design the study, and pay an intern to help you maintain your plots and gather data.

“Timely Viticulture” is designed to give those in the Maryland and Eastern grape industry a timely reminder of things they should be considering in an established vineyard or when establishing a planting.

Article (reading on line): http://www.extension.umd.edu/learn/crop-estimation

PDF (for printing): https://www.extension.umd.edu/sites/default/files/_docs/articles/TVCropEstimation_0.pdf

Additional “TimelyVits” — sorted by plant development stage: http://extension.umd.edu/smallfruit/grapes/timely-viticulture and other information is always available on my web site at: http://extension.umd.edu/smallfruit/grapes

EPA Pesticide Program Updates
From EPA’s Office of Pesticide Programs
www.epa.gov/pesticides

August 11, 2014

Agreement to Cancel Methomyl Use on Some Crops

EPA and the manufacturers of the insecticide methomyl have agreed to cancel the use of methomyl on barley, oat, and rye, limit its use on wheat to Idaho, Oregon, and Washington, and reduce the application rates and the number of applications for some crops by 20-50%. These actions are in response to EPA’s evaluation of data showing risk from methomyl in drinking water. EPA is taking this action to protect human health and the environment.

We expect to release the human health and ecological risk assessments for methomyl for public comment in early 2016. Additional mitigation measures may be identified as EPA continues its evaluation of this pesticide.

EPA is taking steps to make sure that the new use restrictions appear on all methomyl product labels beginning in late 2014. This will ensure timely implementation of changes to the number of applications and maximum seasonal rate for several crops. Specifically, the mitigation measures include:

- cancelling the use of methomyl on barley, oat, and rye and limiting its use on wheat to Idaho, Oregon, and Washington;
- reducing the number of applications for celery, head lettuce, and peppers by 20% and reducing the seasonal maximum rate by 12% to 20%;
- adding label language for corn to change the timing of applications so that only two applications can occur prior to tassel push at the 1-2 leaf stage and to disallow applications on bare soil; and
- reducing the number of applications to leaf lettuce, field corn, popcorn, and seed corn by 25% to 50%.

The nationwide mitigation measures can be viewed in the risk mitigation decision document available at Regulations.gov.

CDMS
Pesticide Labels and MSDS On-Line at: http://www.cdms.net/
This last week I got an email inquiring about invasive earthworms. We have to deal with invasive weeds, disease, mites and insects. To add to this list we have an invasive worm damaging native plantings that is spreading its range. This worm, *Amythas agrestis*, has many common names including “Asian jumping earthworm”, “Georgia Jumpers”, “Alabama Jumpers” or “Crazy Snakeworms”. I am not sure why people are trying to pin a State name on an invasive species. This worm is very popular with fishermen since it wiggles around on the hook attracting fish. In the south it is very popular for attracting catfish. Unfortunately, fishermen purchase the worms then discard them near streams and in wooded areas. The worm is changing the habitat of the forest.

The problem is this earthworm is much more destructive and aggressive than European species. This earthworm alters the soil structure and chemistry significantly. It is clear that introduced earthworms can significantly alter soil structural properties, organic matter and nutrient dynamics, and plant and animal communities above and belowground. In wooded areas it breaks down leaves and organic material so rapidly it reduces the growth of native understory plants. Often invasive species of plant move into this environment.

*Amythas* species are turning up in gardens in New England and even damaging golf courses greens in Kentucky. Dan Potter of Kentucky University is working on controlling *Amythas* species in golf greens where they create large piles on putting greens. Dan Gilrein, from Cornell University reported seeing wood mulch nature trails in Delaware where *Amythas* species churned the woodland mulch so the mulch paths were totally destroyed.

There is not a whole lot that can be done once the aggressive worms are introduced into a woodland but it is being recommended to fishermen that they dispose of *Amythas* worms when they are finished fishing and not release them into woodland soils.

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**1. Maryland Woodland Stewards 2014 nominations close August 18th!**

If you’ve been considering applying for this year’s Maryland Woodland Stewards training, now is the time to decide. This year’s program will be held October 2-5th at the Shepherd’s Spring Retreat outside of Sharpsburg, MD (Washington County).

The Maryland Woodland Stewards (MWS) program teaches enthusiastic individuals how to be good stewards of natural land, and good advocates for forest and wildlife stewardship in their community. We encourage you to speak with one or two landowners with whom you have worked to spread the word about MWS, and to invite them to apply or to learn more by calling or visiting the website. A brochure about this year’s program is available at: [http://extension.umd.edu/sites/default/files/_docs/programs/woodland-steward/2014Brochure.pdf](http://extension.umd.edu/sites/default/files/_docs/programs/woodland-steward/2014Brochure.pdf)

The application deadline for this year’s training is August 18, 2014. Space is limited, so apply as early as possible.

More details and application materials can be found through the MWS page at [http://extension.umd.edu/woodland/maryland-woodland-stewards](http://extension.umd.edu/woodland/maryland-woodland-stewards). Please contact Jonathan Kays at jkays@umd.edu or 301-432-2767 ext. 323 for more information.


The University of Maryland Extension will offer the General Forestry Course for the Fall 2014 semester. Both the paper and online version will be offered. The course begins September 1 and runs until December 15, 2014. Registration opens July 1. As there are no formal classes, you work from the comfort of your home using your own woodlot, a friend’s or a public forest. You will learn how to protect your trees from insects, diseases and fire; step-by-step procedures will walk you through a forest inventory and stand analysis; and the details of
the forestry business are presented, including tax nuances and the sale and harvest of forest products. Ultimately, the course exercises help you develop the framework for a management plan for your forest.

The cost for this non-credit forestry course is $300 during the month of August. Late registration (September 2-14) is $400. To learn more or to register, go to http://extension.umd.edu/forestry-course

3. Non-timber Forest Products Fall 2014 Webinar Series

Forest, agriculture, natural resources and Extension professionals from across the Eastern US are offering a series of webinars on a variety of subjects related to non-timber forest products, such as ginseng, mushrooms, and fiddleheads. These one-hour webinars are part of the American Tree Farm System's Family Forest Owner Webinar series. Click on the links for more information and to register on line:

August 21: From Ginseng to Mushrooms: Goodies from Your Woods
September 3: The Incredible Edible Ostrich Fern Fiddlehead
September 16: Ramping Up to Forest Farm Culinary Delights
September 25: Forest Brews
October 9: Manage Your Forest for Pine Straw and Rake in the Profits
October 29: Art from the Forest
November 10: Forest Cultivated Mushrooms - A Rotten Business
December 12: Forest Botanicals - Deep and Tangled Roots

Visit our website: http://extension.umd.edu/woodland

Make plans to join us on Wednesday August 27th from 5:30 – 7:30 at the Wye Research and Education Center for a Twilight Vegetable Meeting, featuring: “Solanaceous” Crop Research.

Come hear and see Dr. Jerry Brust, UME State Vegetable Specialist, as he presents information on High Tunnel tomato production. Jerry has been conducting tunnel research over the past several years focusing on pest populations and nutrition that affect fruit quality.

See what Dr. Cerruti Hooks of the UM Department of Entomology and his team have been working on. Research focus has been examining cover crop manipulation and companion plantings and how these cultural practices can influence insect pest and beneficial insects.

Having weed problems in your row crops? Sudeep Mathew, Dorchester County Extension Educator, conducts herbicide trials in tomato, peppers and eggplants. Hear about new herbicides and strategies to reduce weed populations.

Do you use manure in your vegetable cropping systems? Sarah Allard, PhD. Candidate in the UM Department of Plant Sciences and Landscape Architecture has been conducting field research examining the use of naturally occurring soil bacteria to decrease to incidence of Salmonella in field grown tomatoes. Come and hear Sarah discuss these trials and the implications of using this technique to limit human pathogens in field production.

A light dinner will be served prior to the meeting. Pre-registration is not required. If you require assistance to participate in this meeting please call ahead. For more information contact Mike Newell (mnewell@umd.edu or 410-827-7388)

Meeting location:
Wye Research and Education Center
211 Farm Lane
Queenstown MD 21658

Directions can be found on-line at http://agresearch.umd.edu/wye

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Expanded Facility Supports Larger Audience
Mid-Atlantic Crop Management School
November 18-20, 2014

The annual Mid-Atlantic Crop Management School will be held November 18-20 at the Princess Royale Hotel in Ocean City, MD. This highly acclaimed event has for many years been the “one-stop” location for Certified Crop Advisors to obtain Continuing Education Units (CEUs) in the categories of Crop Management, Pest Management, Nutrient Management, and Soil and Water Management. This year, a remodeled conference center
at the Princess Royale will provide larger rooms for the concurrent educational sessions offered at this school. The expanded facility allows the planning committee to accept a higher number of students than could be supported in previous years.

Over the three days of the school, there will be 45 different topics presented in the four subject areas previously mentioned in addition to an open fifth category. I encourage farmers and farm managers, agronomists, crop consultants, extension educators, farm service providers, soil conservationists, state department of agriculture personnel, and extension educators located in the Mid-Atlantic to register and attend this school. Please watch for information about this year’s program by visiting:

http://psla.umd.edu/extension/md-crops

A registration link will be found at this site shortly after Labor Day (September 2).

http://extension.umd.edu/agmarketing

A new “Ag Marketing News Update – August 2014: “Ignite Your Sales with Sensory Branding” has been posted to the web:

http://extension.umd.edu/learn/ignite-your-sales-sensory-branding

If you have questions or comments about this publication or have clients or colleagues that would value receiving it as well, please contact Ginger Myers at gsmyers@umd.edu or simply reply to this message.

See the Attachments!

1) WMREC Horticultural crops Twilight
2) Potato Late Blight Advisory

Vegetable & Fruit Headline News

A timely publication for the commercial vegetable and fruit industry available electronically in 2014 from April through October on the following dates: April 17; May 15; June 19; July 17; August 14; September 18; and October 23.

Published by the University of Maryland Extension Agriculture and Natural Resources Profitability Impact Team

Submit Articles to:

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410 222-3906
myersrd@umd.edu

Remaining Article submission deadlines for 2014:
September 17; and October 20.

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This educational meeting is intended to provide producers the opportunity to get a firsthand look at several of the ongoing projects at the University of Maryland’s research facility in Keedysville.

Highlights include:

- Updates from University of Maryland Extension researchers and specialists – Bryan Butler, Kate Everts, Chris Walsh, and Gui Chen
- The latest on the Brown Marmorated Stink Bug (BMSB) and Spotted Wing Drosophila on Vegetables and Fruit
- Update on disease control in vegetable crops
- Tour of ongoing projects including:
  - Pumpkin IPM Spray Trials
  - New NC 140 cg rootstock trial trellis planting with Cripp’s Pink and Brookfield Gala on G.202 rootstock budded directly from tissue culture, G.202, G.935 and G.41 rootstocks all budded from stool bed plants
  - Raspberry fertility trial
  - BMSB spray trials using Surround®
  - Mobile and stationery high tunnels
  - Apple tree architecture program update
  - Industry and research cover crop demonstration

Sandwiches and refreshments will be provided. Registration is not required, but will help us to plan for handouts and refreshments.

Please RSVP to Melanie by August 6th to mabbott@umd.edu or 410-386-2760

Questions? Contact Bryan Butler at bbutlers@umd.edu or 888-326-9645

Funding by the Maryland State Horticultural Society
Late blight is currently widespread in Pennsylvania. In addition, it is confirmed in Loudoun County, VA. The genotype that is present is US23. Please scout your fields aggressively for presence of late blight.

For more details on locations of current late blight outbreaks see [http://www.usabllight.org/](http://www.usabllight.org/)

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