

The University of Maryland Extension Agriculture and Natural Resources Profitability Impact Team proudly presents this bi-weekly publication for the commercial vegetable and fruit industry.

## Summer Field Observations Southern Maryland Farms



By Ben Beale  
Extension Educator & CED,  
Agriculture  
[bbeale@umd.edu](mailto:bbeale@umd.edu)

- ✓ This has been a very busy two weeks for farmers as vegetables are approaching peak harvest season.
- ✓ The tomato crop is slow to ripen, but quality remains good. The early problems with leaf spot disease causing defoliation and sunscald continues. The main culprits continue to be Bacterial Leaf Spot, Septoria and Early blight.
- ✓ We are seeing the start of Anthracnose on tomato fruit, most likely enhanced by the large amount of necrotic foliage on plants from leaf spot diseases.
- ✓ Stinkbug damage to fruit is widespread, particularly on tomatoes. The brown and green stinkbugs are most prevalent.
- ✓ We are also seeing bacterial leaf spot in peppers.
- ✓ Watermelon and cantaloupe harvest continues. We are experiencing a light crop at this point, perhaps due to rainy conditions and poor early fruit set. On poorly drained fields, or those with a history of continuous vegetables, Phytophthora is showing up as fruit rot.

## Summer Field Observations WyeREC

By Michael Newell  
Horticultural Crop Program Manager,  
Maryland Agricultural Experiment Station  
[mnewell@umd.edu](mailto:mnewell@umd.edu)

### Strawberry Plasticulture July 24 2013

Don't forget to order your plants ASAP. The link below, courtesy of the NC Strawberry Growers Association, list many of the plant material suppliers for fall planting. If you are not already a member of this organization, you should consider joining. It's a great resource for plasticulture information at: <http://www.ncstrawberry.com/docs/2013PlantSupplierList.pdf>

## Volume 4 Issue 8

July 25, 2013

Recently I had the opportunity to meet with some local folks who will be planting their first plasticulture berries this fall in Talbot County. It was great to hear how well they investigated this venture. They talked with current growers, met with University specialist from Penn State, Rutgers, University of Delaware and Maryland and attended the most recent Strawberry Expo in North Carolina. We talked at great length about this system and I believe they have a good understanding of it and I wish them all the best.

### Strawberry Perennial Matted-Row

After renovation, don't forget to keep the plants healthy with timely irrigations, pest control (don't let the leaf hoppers burn your plants) and weed management.

### Tree Fruit, Peach

We will begin Redhaven harvest later this week. The fruit are sizing up nicely with all the rain lately. Minimal BMSB damage has been observed on earlier harvested varieties.

### Tree Fruit, Apple

We harvested the scab-immune variety Pristine this week. It is a good-sized yellow apple. I don't know why the birds didn't get in to them. Maybe it's because they are enjoying the near-by sweet corn, maybe they were competing with the BMSB. This row got hammered with BMSB injury. Keep the cover sprays going for Summer disease control.

### Wine Grapes

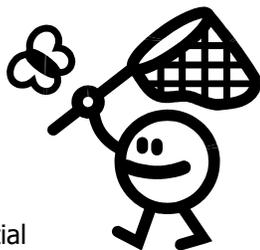
We recently completed leaf pulling in the fruiting zone of our low cordon VPS research vineyard. This will improve air circulation and drying of the fruit clusters as well as enhance berry coloring. Japanese beetles were out in full force the past few weeks. They seem to always concentrate the majority of their feeding in the top of the canopy, which is OK in grapes using this training system..

### Pumpkins

Cucumber beetles wasted no time finding and feeding on the plants once the "at planting" soil applied Admire treatment was depleted. This coincided with the plants beginning to run which is also a good time to apply treatments for Squash Vine Borer. Squash Bugs were also present in lower numbers. Treatment at this time is a triple play! ***Make plans to attend the 2013 WyeREC Horticultural Crops Twilight Meeting on Wednesday August 28 from 5-7:30PM. Get a chance to see what I've been talking about.***

## Vegetable Crop Insects

By Joanne Whalen,  
DE Extension IPM Specialist  
[jwhalen@udel.edu](mailto:jwhalen@udel.edu)



### Kudzu Bug on Succulent Beans

As indicated in past newsletters, initial findings from host preference studies from Georgia indicate that Kudzu bug does not prefer non-soybean beans, but will occur on them. We have sent samples of 3 lima bean varieties (C-elite Select, Cypress and Concentrated Fordhook) to the Georgia program to be evaluated so we will have more information as soon as it is available. In the one pole lima bean where the first adults were detected, the numbers of adults have dwindled and a few egg masses were found but no nymphs hatched. As a reminder, it is the nymph that is important in regards to treatment in soybeans once fields reach flowering and the pod development stage.

Also, this insect is a slow feeder that will gradually drawing down plant vigor therefore it gives us plenty of time to sample fields and react with a treatment if needed. In the meantime, as I have indicated in past newsletters, you will want to scout succulent beans to see if this trend is true in our area. We may have to use the information developed for soybeans this season to help us make management decisions in succulent beans if the need arises. We will keep you posted of any new finds as well as new management information as it is developed.

### Lima Beans

With the wet weather, spider mites problems have not occurred like last year but we do find an occasional mite in a field. Be sure that you continue to sample for mites in your routine sampling each week. Early detection and control before populations are exploded is necessary to achieve effective control. 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 if you find 15 adults and/or nymphs per 50 sweeps.

### Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. Although aphid populations still remain low in most fields, we have had reports of localized infestations. At this time of year, early detection is critical since populations can quickly explode. It is also the time of year to watch for beet armyworm, yellow striped armyworm, cabbage loopers and cucumber beetle adults feeding on the rinds of watermelons. 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.

### 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. Be sure to check local moth catches in your area by calling the Crop Pest Hotline (instate – 800 345-7544; out of state- 302 – 831-8851) or visit our website at

<http://agdev.anr.udel.edu/trap/trap.php>. At this time, 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 will not control this insect.

### Snap Beans

As corn borer and corn earworm populations start to increase again, you will need to consider treatments for both insect pests. 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. 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> <http://extension.udel.edu/ag/insect-management/insect-trapping-program/ecb-and-cew-moth-catch-thresholds-for-processing-snap-beans/>

### Sweet Corn

Be sure to sample all fields from the whorl through pre-tassel stage for corn borers, corn earworms and fall armyworm. We are starting to see an increase in whorl infestations of fall armyworm. A treatment should be considered when 12-15% of the plants are infested. Since fall armyworm feeds deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible. Be sure to check both blacklight and pheromone trap catches for silk spray schedules since the spray schedules can quickly change. Trap catches are generally updated on Tuesday and Friday mornings You can also call the Crop Pest Hotline (in state: 800-345-7544; out of state: 302-831-8851).

<http://agdev.anr.udel.edu/trap/trap.php>  
<http://extension.udel.edu/ag/insect-management/insect-trapping-program/action-thresholds-for-silk-stage-sweet-corn/>

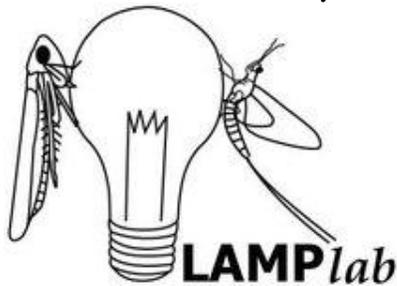
[Commercial 2013  
Vegetable Production  
Recommendations  
Maryland EB 236](#)



# **\*\*PEST ALERT\*\***

## **Kudzu Bug Discovered on Maryland**

Alan W. Leslie  
Ph.D. Candidate, Entomology  
University of Maryland



[Go to the LAMP/lab](#)

Alan Leslie and Veronica Johnson at the University of Maryland, Entomology "Lamp Lab" have found the invasive insect known as the kudzu bug in Anne Arundel, Calvert, and Prince George's Counties on kudzu vines.



To help keep everyone informed of their searches, the [Maryland Kudzu Bug Survey Website](#) has been launched; This website will help disseminate information on the insect as it is collected.



Photo by: Russ Ottens, University of Georgia, Bugwood.org

Tracking The Kudzu Bug In Maryland at:  
<http://agmr.umd.edu/news/tracking-kudzu-bug-maryland#sthash.oJUCxSlw.dpuf>

## **University of Maryland Potato Late Blight Advisory**

By Kate Everts, Vegetable Pathologist,  
University of Delaware and University of Maryland;  
[keverts@umd.edu](mailto:keverts@umd.edu)

**Reminder: we do not have active late blight in Maryland at this time.**

Late blight forecasts are being generated for eight locations across Maryland based on the programs Blightcast and Simcast. The information below indicates the current spray interval that Simcast has recommended. Maryland spray intervals are variable this week, which reflects the variation in our rainfall and temperatures across the state. Simcast requires information on specific fungicide applications in a field. Therefore, I am reporting the Simcast spray interval as a guideline only. The spray intervals in Table 1, are based on the assumption that chlorothalonil, which has a 5-day spray interval, was used. Table 2 shows the residual activity of some other common fungicides used for potato late blight. If you have sprayed something other than chlorothalonil, find the product in the table and adjust your spray interval accordingly. There are numerous fungicides now labeled for late blight control. See the 2013 Commercial Vegetable Production Recommendations, Maryland <http://extension.umd.edu/mdvegetables/2013-commercial-vegetable-production-recommendations>.

**Table 1 Late Blight Disease Severity Value (DSV) Report**

Location	DSV	Simcast spray interval recommendation *
Dorchester Co.	177	10-day
Germantown	236	5-day
Clinton	236	5-day
Owings	203	6-day
Severn	236	5-day
White Marsh	missing	7-day
Mechanicsville	204	6-day
Oakland	299	5-day

\*Spray interval recommendation is based on production of a susceptible cultivar and application of a protectant fungicide such as chlorothalonil. A 50% emergence date of May 1 was estimated for Dorchester Co., Clinton, Owings, Severn, Mechanicsville, and White Marsh. A 50% emergence date of May 5 was estimated for Germantown, and May 10 for Oakland.

# Blossom End Rot

## Very Common This Summer

By Jerry Brust  
 IPM Vegetable Specialist, UME  
[jbrust@umd.edu](mailto:jbrust@umd.edu)

This summer has been unusual as it has been about normal for temperatures, but we have had a large number of cloudy days and in some areas of the mid-Atlantic much greater rainfall amounts. Long periods of overcast skies cause a slowdown of transpiration in the plant and water logged soils also slow water movement into the plant. Calcium (Ca) moves to the plant via mass flow, i.e., where dissolved minerals like calcium move to the root in soil water that is flowing towards the roots. As it passes through the plant Ca is deposited in tiny amounts into the fruit. If anything slows or interrupts this stream the tiny amount of Ca needed at that moment is not deposited and the area furthest from the top of the fruit suffers—resulting in blossom end rot (BER). I have seen more BER this year on a large number of vegetables than I have in the past 5 years (fig 1). Figure 2 shows how precise and constant the Ca flow in a plant has to be to supply just the right amount of Ca at the right time. The large fruit on this particular plant developed before there was a Ca interruption, but the fruit a little younger suffered a Ca interruption, with the smallest (youngest) fruit suffering the greatest Ca interruption. Tissue analysis from this same plant showed that calcium was in the high range when the blossom end rot took place, demonstrating the importance of irrigation and water supply to reduce blossom end rot and not necessarily the level of calcium in the soil. Not much you can do about overcast skies and heavy rains. You could add a foliar calcium nutrient spray weekly or so. It helps a little and sometimes a little is all you need.

**Fig. 1 Several different vegetables with blossom end rot.**



**Fig. 2 Older larger fruit received enough Ca, but younger (smaller) fruit did not.**



## High Temperatures of Last Week Could Mean Poor Fruit Set in Tomatoes

By Jerry Brust  
 IPM Vegetable Specialist, UME  
[jbrust@umd.edu](mailto:jbrust@umd.edu)

The high temperatures we had last week with daytime highs 95°F and above and nighttime lows only getting down to 80°F in most of the mid-Atlantic for several days in a row may cause blossom drop and fruit abortion in tomatoes. Normally in tomato fields pollination is achieved just by the action of the wind. Pollen is released from the tomato flower and falls downward onto the stigma. Without pollination flowers die and drop. This condition can affect tomatoes, peppers, snap beans, and other fruiting vegetables, but is especially prominent in tomatoes. In tomatoes, blossom drop is usually preceded by the yellowing of the pedicel (fig 1). Tomato flowers must be pollinated within 50 hours or they will abort and drop off. This is about the time it takes for the pollen to germinate and move up the style to fertilize the ovary.

**Fig. 1 Several tomato pedicels are turning yellow (arrows).**



Tomato plants can tolerate extreme temperatures for short periods, but several days or nights with temperatures above 90°F (daytime) or 72°F (nighttime) will cause the plant to abort flowers and fruit (fig 2). At these temperatures the pollen can become sticky and nonviable, preventing pollination from occurring and causing the blossom to dry and drop. The relative humidity also plays a role in pollination, high levels (>80% RH) (which we had last week) during pollen shed will cause the pollen not to be released properly resulting in poor or incomplete pollination.

**Fig. 2 Aborted flowers and fruit (arrows) on tomato plant caused by high temperatures.**



## Postemergence Weed Control in Lima Bean

By Mark VanGessel  
DE Extension Weed Specialist  
[mjv@udel.edu](mailto:mjv@udel.edu)

Options for postemergence broadleaf weed control in lima beans are limited to Sandea, Raptor, or Basagran. Remember, Reflex is labeled only for snap bean and can severely injure lima beans. Do not spray Raptor or Basagran before the first trifoliolate is fully expanded and Sandea requires at least two fully expanded trifoliate. All of these products should be applied before the beans have started to flower. These products are not effective on most weed species over 3 inches tall. So they need to be applied early (approximately 3 to 4 weeks after planting). Basagran will not effectively control pigweed. Raptor and Sandea are group 2 herbicides (same mode of action as Pursuit) and a lot of fields have pigweeds resistant to group 2 herbicides.

Raptor is labeled for lima beans in Delaware and Maryland at 4 fl oz. The label requires the addition of Basagran at 6 to 16 fl oz/A to improve crop safety and minimize the yellowing in the young tissue. In addition, it is labeled for use with a non-ionic surfactant.

Postemergence grass control can be accomplished with Poast or Select Max. Select Max allows for the use of non-ionic surfactant in place of crop oil concentrate.

Tankmixing either of these grass herbicides with Raptor, Sandea, or Basagran can result in an antagonism that reduces grass control. Finally, Select will not control goosegrass. See photos of goosegrass at the VT website: [http://www.ppws.vt.edu/scott/weed\\_id/elein.htm](http://www.ppws.vt.edu/scott/weed_id/elein.htm).

## BMSB and SWD Update for Central & Western Maryland

By Bryan Butler, Principal Agent, UME  
Carroll County & Mid-Maryland Tree Fruit Agent

It has seemed this season that BMSB has been looming on the borders and in wooded areas since June. Every once in a while they seem to be moving into orchards and other crops. Monitoring the perimeters has shown some fairly large numbers in corn and an increased interest in soybeans but damage has not appeared to be significant in horticultural crops that are being well managed. As we move into the end of the 2013 season and as the number of crops in the field begin to decrease, it is important to remember BMSB numbers tended to increase in the 2008-2010 seasons and in 2012 it was not till the end of the season that damage occurred at a significant level in orchards, mainly because we thought the danger had passed but it hadn't. That could mean trouble for late crops again this year. We have seen increasing BMSB captures in light traps and baited pyramid traps in many locations. In addition, bugs have been found in orchard blocks near woodlots in one location – likely moving in from wild hosts. At WMREC numbers in fall raspberries and apples are definitely on the rise.

This information is presented simply to encourage everyone to be vigilant in terms of scouting, especially considering the value of the apple crop this year. As far as SWD this pest appears to have become ubiquitous where we have been sampling. Based on last year's monitoring numbers will continue to increase through the late fall. It will be important to keep a close eye on the rest of the blueberry crop, blackberries and fall raspberries for the remainder of the season. Any attempts at increased sanitation in the fields will certainly be useful but a seven day spray schedule is probably more practical in pick your own situations. For pesticide recommendations see the management factsheet we have prepared with Penn States small fruit specialists.

<http://pubs.cas.psu.edu/FreePubs/PDFs/ee0045.pdf>

There is no question this is a pest that we will have to deal with in the long term and it certainly does not make any of our lives easier. However, I do not think this is going to be catastrophic to soft fruit production. I feel this way because I have observed this season when SWD has appeared to flare up in fruit, that after closely examining the circumstances there have been reasons that predisposed the crop to infestation i.e. absence of insecticides or allowing the crop to overripen, and when

the larva in the fruit were reared out, many of them were not SWD but rather other fruit flies that have been around a long time. When SWD has shown up in fruit sampling this year number in black raspberries were about three larva in 100 fruit in 3 out of five locations with 0 at the other two locations I tart cherries SWD showed up in fruit that was allowed to hang until very ripe. The good news is that in strawberries from five locations in central and western Maryland there were zero SWD in traps and zero in fruit sample this season as was the case with sweet cherries. I have also had to dissect fruit to look more closely than I ever have before to find the larva in the fruit and wonder if there have been a certain number of fruit fly larva in the fruit in seasons past that went undiagnosed.



**Mid-Season Aronia Twilight Tour,  
Wednesday July 31<sup>st</sup>, 2013, at Wye  
Research and Education Center  
Queenstown, MD,  
5:00 to 7:30 p.m.**

A mid-season Aronia Twilight Tour will be held at Wye Research and Education Center. This program will consist of a variety of information about Aronia culture and research program updates.

While Aronia is a hardy plant, a few pests have shown problematic. New pests like Brown Marmorated Stink Bug and Spotted Wing Drosophila will be discussed along with the old problems like Japanese Beetle and Rust.

Information presented will include the latest updates and potential control measures. Also, does a soil analysis confuse you? What does ENR mean or buffer pH? Learn the significance of each parameter tested and how soil amendments work. Also presented will be our research summaries and plans for the year. This program will be for both the veteran Aronia growers, and for those just starting or thinking about it.

There is no cost for this event, but registration is necessary. Light fare and beverages will be served, along with Aronia ice cream.

**Please register with Andrew Ristvey  
NO LATER THAN July 26th, 2013  
410-827-8056 x 113  
[aristvey@umd.edu](mailto:aristvey@umd.edu)**



**Crops Research Twilight  
Barbecue & Ice Cream Social  
CMREC Upper Marlboro Farm  
August 8, 2013**

You are invited to attend a **Field Crops Research Twilight, Barbecue and Ice Cream Social** at the **Central Maryland Research & Education Center, 2005 Largo Rd., Upper Marlboro, MD** on **Thursday, August 8, 2013 from 4:30 to 9 pm.**

A barbecue dinner will be served at 4:30 pm followed by homemade ice cream prior to the evening tour.

University of Maryland Extension Educators and Specialists will showcase their field crop, vegetable and fruit research plots. The twilight tour highlights will include:

*Vegetable integrated pest management and reduced risk control methods; Field crops research updates; Meadow orchard concept and Fruit research updates; and a Vineyard research update for wine grapes.*

**Barbecue Begins at 4:30  
Ice Cream Served at 5:15  
Wagon Tour Begins at 6:00**



For full meeting details, and registration information contact any of the Southern Maryland Extension offices. For more information contact David Myers at the Anne Arundel County Extension office at 410-222-3906.

**Organic Vegetable Twilight  
CMREC Upper Marlboro Farm  
August 15, 2013**



**What:** Tours of University of Maryland organic research plots

- The effect of cover crops, plastic and other parameters on soil CO<sub>2</sub> emissions
- Weed control in organic systems
- Companion plantings for increased biocontrol
- Cover crop effects on pests and natural enemies
- Speakers include organic growers and University of Maryland researchers

**Where:** Upper Marlboro Research and Education Center  
2005 Largo Rd Upper Marlboro, MD 20774

**When:** August 15, 2013. Dinner served from 5-6pm  
Wagon tours start at 6pm

**Who:** All organic vegetable growers or those interested in organic vegetable production

There is no charge for the meeting, but registration is requested to help with meal planning. Register for meeting by sending an email to Jerry Brust [jbrust@umd.edu](mailto:jbrust@umd.edu)



## WMREC Horticultural Crops Twilight

**When:**

Wednesday, August 21, 2013 - 5:00pm to 7:30pm  
Add to Calendar: [iCalendarOutlookGoogleYahoo](#)

**Where:**

Western Maryland Research and Education Center  
University of Maryland Extension  
18330 Keedysville Road  
Keedysville, MD 21756  
United States

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

Please RSVP to 410-386-2760/888-326-9645 or e-mail [mabbott@umd.edu](mailto:mabbott@umd.edu) Questions? Contact Bryan



## WyeREC Horticultural Crops Twilight

**When:**

Wednesday, August 28, 2013  
5:00 pm – 7:30 pm

**Where:**

Wye Research and Education Center  
211 Farm Lane  
Queenstown MD 21658

Sandwiches and refreshments will be provided.  
Registration is not required, but will help us to plan for handouts, food and drinks. Reply to: Debby Dant, 410-827-8056 X115, [ddant@umd.edu](mailto:ddant@umd.edu) or Michael Newell, 410-827-7388, [mnewell@umd.edu](mailto:mnewell@umd.edu)



### [CDMS Pesticide Labels and MSDS](#)

### *Vegetable & Fruit Headline News*

A bi-weekly publication for the commercial vegetable and fruit industry available electronically in 2013 from April through September on the following dates: March 21; April 18; May 9 & 23; June 6 & 20; July 11 & 25; August 15; September 12.

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

**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](mailto:myersrd@umd.edu)**



**Article submission deadlines for 2013:** March 20; April 17; May 8 & 22; June 5 & 19; July 10 & 24; August 14; September 11.

**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.