

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.

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## Field Observations from Southern Maryland

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- ✓ Southern Maryland received some much needed rain over the last 2 weeks. Crops have responded well.
- ✓ Earlier tomato plantings are struggling against the normal late season accumulation of foliar diseases and worm pest. Later planting seem to be holding up pretty well. Leaf mold on tomatoes has been notably worse than in past years, particularly in the field.
- ✓ Most cucurbit fields have at least some downy mildew and powdery mildew. Fruit set in pumpkins also is variable this year, most likely due to the high temperature we experienced this summer.

## Vegetable Crop Insect Update

By Joanne Whalen  
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### Cabbage

Continue to sample for cabbage looper, diamondback larvae, fall armyworm, beet armyworm and Harlequin bug. Be sure to scout and select controls options based on the complex of insects present in the field.

### Lima Beans

Continue to scout for stink bugs, lygus bugs, soybean loopers, beet armyworm and corn earworm. Moths can still be found laying eggs in fields. Be sure to sample for corn earworm larvae as soon as pin pods are present. A treatment will be needed if you find one corn earworm larvae per 6 ft-of-row.

### Peppers

At this time of year, corn borer, corn earworm, beet armyworm and fall armyworm are all potential problems in peppers. So be sure to select the material that will control the complex of insects present in the field. Be sure to check local moth catches in your area by calling the Crop Pest Hotline (in state: 800-345-7544; out of state: 302-831-8851) or our webpage at:

<http://ag.udel.edu/extension/IPM/traps/latestblt.html>

We continue to see aphid populations increasing, especially in fields where pyrethroids have been used on a weekly basis. Labeled materials are only effective if applied before populations explode.

### Snap Beans

You will need to consider a treatment for corn borer, corn earworm, beet armyworm and soybean loopers. Sprays are needed at the bud and pin stages on processing beans for worm control. With the diversity of worm pests that may be present in fields, be sure to scout fields and select materials that will control the complex of insects present. For the most recent trap catches in your area and to help decide on the spray interval between the pin stage and harvest for ECB control in processing snap beans, you will need to call the Crop Pest Hotline (in state: 800-345-7544; out of state: 302-831-8851) or check our website at:

<http://ag.udel.edu/extension/IPM/traps/latestblt.html>  
and

<http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html>

### Spinach

Both webworms and beet armyworms moths are active at this time and controls need to be applied when worms are small and before they have moved deep into the hearts of the plants. Also, remember that both insects can produce webbing on the plants. Generally, at least 2 applications are needed to achieve control of webworms and beet armyworm.

### Sweet Corn

Be sure that a spray is applied as soon as ear shanks are visible on plants (before you see any silk). If fall

armyworms are present in the whorl, you will need multiple whorl sprays for this insect before the ear shank spray to achieve effective control and to prevent larvae from dropping into the ear zone. Once fields are silking, you will need to check both blacklight and pheromone trap catches for silk spray schedules since the spray schedules can quickly change:

<http://ag.udel.edu/extension/IPM/traps/latestblt.html>

or call the Crop Pest Hotline (in state: 800-345-7544; out of state: 302-831-8851). Be sure to check all labels for days to harvest and maximum amount allowed per acre.

## Brown Marmorated Stink Bug In Peppers

By Jerry Brust, IPM Vegetable Specialist  
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There has been a large and rapid increase in brown marmorated stink bug (BMSB) in some pepper fields in the past week in central Maryland. Numbers just two weeks ago in these areas were very low with just a few nymphs observed.

We know that BMSB populations tend to increase in August and through the fall into the first frost, but this was such a rapid increase that a great deal of damage was done to bell and banana peppers.

These peppers had been treated with chlorantraniliprole (Coragen) and this took care of any worm problems very well, but the growers did not think stink bug. There were 8-10 nymphs and 2-3 adult BMSBs per plant in these fields.

Damage to peppers as you might guess was extensive (Fig. 1). Much of the feeding appeared to be done by nymphs (Fig. 2).

BMSB nymphs have a white stripe on all six of their legs, which is unique compared with our most common native stink bug species. This white stripe fades when nymphs become adults.

Besides the white 'cloudy spots' on fruit, many peppers had dark brown and red as well as bright white areas (Fig. 1). These bright white areas were found to have yeast growing within the wound that from previous studies we learned has been injected by the BMSB when it feeds.

One odd thing from the BMSB outbreak was that tomato fields that were next to or very close to the pepper fields had almost no BMSBs in them. Whether this would have changed soon we are not sure as the growers did not take any chances and treated.

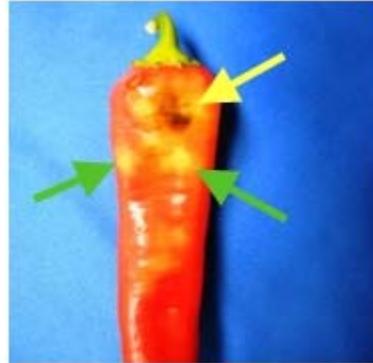


Figure 1. BMSB damage to bell and banana pepper, brown spot (yellow arrow) and bright white areas (green arrows).



Figure 2. BMSB nymphs feeding on pepper.



## How Late is Too Late for Pumpkins?

By Gordon Johnson  
Extension Vegetable & Fruit Specialist  
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Delayed fruit set in pumpkin can be due to many factors including late planting, heat and water stress, poor pollination and excess fertility (too much N). When set is delayed until August, the question is will the pumpkin develop and color in time for sales.

Under favorable summer growing conditions pumpkins will start to color about 4 weeks after fruit set and will be completely colored by 7 weeks after set. If fruit set is delayed until August, reduced day lengths and cooler temperatures may increase the time for full color development. Varietal differences in days to maturity also come into play.

In research at Purdue University, reported by [Liz Maynard in the Purdue Vegetable Crops Hotline](#) pumpkin fruit (Magic Lantern and Gold Medal Varieties) that set in August were tagged and then evaluated for maturity in October. They found that "for pumpkins planted June 16 or June 25, out of 88 flowers that opened between Aug. 10 and Aug. 21, at least 70% produced pumpkins that were either turning or fully orange by Oct. 2 and 10, respectively. The remaining 20 to 30% either never set a fruit, or the fruit was still immature at the time of harvest. Of 14 flowers that bloomed between Aug. 22 and Sept. 3, 43% produced turning fruit by October 10, and none produced fully orange fruit by that date".

This indicates that pumpkins set in mid-August will be ready for October sales. In fields with delayed set, it will be critical to keep vines healthy through September. This will mean additional fungicide sprays through the month with special attention being paid to powdery mildew and downy mildew.

## High Tight Beds for Plasticulture Strawberries

By Gordon Johnson  
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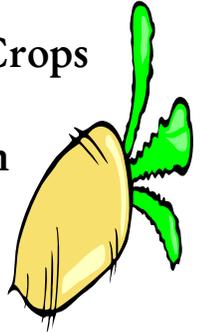


Highest yields in plasticulture strawberries require proper bed formation. While bed makers and plastic layers used for vegetables can be used, it is preferred to use bed makers specifically designed for plasticulture strawberry systems (such as a Kennco or Reddick machines). These produce beds that are 32 inches wide

at the base, 30 inches wide at the top and 10 inches tall with a crowned top for good drainage. With this type of bed, you can have bed centers at 5 ft between beds. It is also important to lay the plastic so that it is tight against the soil. This allows for effective heat transfer that will promote good strawberry growth in the fall.

## Using Winter Kill Cover Crops as a Part of Your Vegetable Cropping System

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Cover crops that will put on significant growth in the fall and then die during the winter can be very useful tools for vegetable cropping systems and the University of Delaware, University of Maryland, and other universities in the region have been conducting research on a number of these winter killed crops for use with vegetables.

Winter killed cover crops that are late summer and fall planted include spring oats, several mustard species, and forage and oilseed radish. Earlier planted summer annuals (millets; sorghums, sudangrasses, and hybrids; annual legumes such as sun hemp or forage soybeans; buckwheat and many others) can also be used as winter killed species. Timing of planting will vary according to the species being used and winter killed species selection will depend on when fields will be available for seeding. Spring oats, mustards, and radishes can be planted from late August through September. Once into October, they do not put on adequate fall growth. Summer annuals should be planted in late July or during August for use in a winter killed system to obtain sufficient growth.

The winter of 2011-2012 was extremely mild and gave us a good look at issues that occur when crops that normally winter kill do not. In our plots at the Georgetown, DE research farm last winter, forage radish, oilseed radish, spring oats, and edible greens type mustard (Tendergreen) did not winter kill completely. All the biofumigant mustards (Pacific Gold, Idagold, Caliente, and Kodiak) winter killed completely (as did summer annuals).

The following are several options for using winter killed species with vegetables:

**1)** Compaction mitigation for spring planted vegetables. Where there are compacted fields, the use of forage radishes has worked very well as a winter killed cover crop by "biodrilling". The extremely large taproot penetrates deep into the soil, and after winterkilling, will

leave a large hole where future crop roots can grow. Oilseed radish also provides considerable "biodrilling". Winter killed radishes works well with spring planted crops such as peas, early sweet corn, and early snap beans.

2) Early planted vegetables. A wide range of early planted vegetables may benefit from winter killed cover crops. For example, peas no-till planted or planted using limited vertical tillage after a winter killed cover crop of forage radish, oilseed radish, or winter killed mustard have performed better than those planted after conventional tillage. Early sweet corn also has potential in these systems as do a wide range of spring vegetables. Winter killed radishes and mustards also have the advantage of outcompeting winter annual weeds leaving relatively weed free fields and also in recycling nutrients from the soil so that they are available in the spring for early crops (decomposition has already occurred).

3) Mixed systems with windbreaks for plasticulture. By planting planned plasticulture bed areas with winter killed cover crops and areas in-between with cereal rye you can gain the benefits of these soil improving cover crops and eliminate the need make tillage strips early in the spring. The winter killed areas can be tilled just prior to laying plastic.

4) Bio-strip till. By drilling one row of forage or oilseed radish and other adjacent rows with rye or other small grains, you can create a biodrilled strip that winter kills and that can be no-till planted into the spring without the need for strip-till implements. This opens up dozens of options for strip tilling (seed or transplanted) spring vegetables.

## Aronia Field Day

Fair Spring Nursery,  
Marydel, Maryland

Wednesday, September 19<sup>th</sup>



The University of Maryland Extension and the Mid-Atlantic Aronia Growers Association are sponsoring an Aronia Field Day at Fair Spring Nursery from 3:00 -7:00 PM on Wednesday, September 19th, 2012.

The program will include the latest information about Aronia culture, organic certification, development of the Maryland Aronia Growers Association, Question and Answer time and a tour of Fair Spring Nursery. The program will end with a cook-out for mingling and question/answers.

Fair Spring Nursery is located in northern Caroline County at 18150 Templeville Road, Marydel, MD 21649  
[www.fairspringnursery.com](http://www.fairspringnursery.com)

Please register with Debby Dant at 410-827-8056.

## Vegetable & Fruit Headline News

A bi-weekly publication for the commercial vegetable and fruit industry available electronically in 2012 from April through September on the following dates: April 12 & 26; May 10 & 24; June 7 & 21; July 12 & 26; August 16; September 6

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**Article submission deadlines for 2012:** April 11 & 25;  
May 9 & 23; June 6 & 20; July 11 & 25; August 15; September 5

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## Commercial 2012 Vegetable Production Recommendations Maryland EB 236



### On-Line at:

<http://www.mdvegetables.umd.edu/files/Maryland%20complete%20book%202012.pdf>

Also available in a new very interactive format at the Delaware Extension site at:  
<http://ag.udel.edu/extension/vegprogram/publications.htm#vegrecs>