RUTGERS
New Jersey Agricultural Experiment Station

The BLUEBERRY BULLETIN

A Weekly Update to Growers
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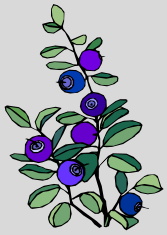


August 18, 2014 **Vol. XXX No. 15**

At a Glance……

PEST/DISEASE/CULTURE	AUGUST 17 – AUGUST 24
SPOTTED WING DROSOPHILA Lannate, Imidan, Malathion, Delegate/Entrust, Asana, Brigade, Danitol, Mustang-Max	Treat on a seven day schedule. Use materials effective for SWD.
Sharpnose Leafhopper Assail 30SG @ 3-5 oz, Actara @ 3-4 fl oz, Admire Pro @ 1-1.4 fl oz, Lannate LV @ 1.5 pt, or Malathion LV @ 10 oz per acre	If you are in Atlantic County, or have low SNLH populations, then 1 application should be applied late August to early September, if needed. In Burlington County with high SNLH populations, treatments may be needed by the middle of the month, and possibly again during the first half of September.
APHIDS Assail, Admire, or Actara	Treat if over 10% of terminals are infested.
PUTNAM SCALE Esteem or Diazinon	Monitor for 2nd generation crawler activity.
NUTRITION	Take leaf samples for analysis.

Culture

Dr. Gary C. Pavlis, Ph. D
Atlantic County Agricultural Agent

It has been some time since I discussed the use of mulch with highbush blueberries and since the season is winding down I finally have the time. The first question is why do we mulch blueberries? We mulch because we are trying to duplicate the natural soil conditions that exist where the highbush blueberry is native and thrives such as the Pine Barrens of New Jersey. Mulch has many benefits not the least of which is increasing the organic matter of the soil. Mulching increases the soil's ability to hold water and nutrients and lowers root temperature in the summer. There was no need to mulch on most south Jersey blueberry farms years ago because the soil was the perfect pH for blueberries and the organic matter was high. It was rare to find a Jersey farm that mulched before the mid 90's. Today,

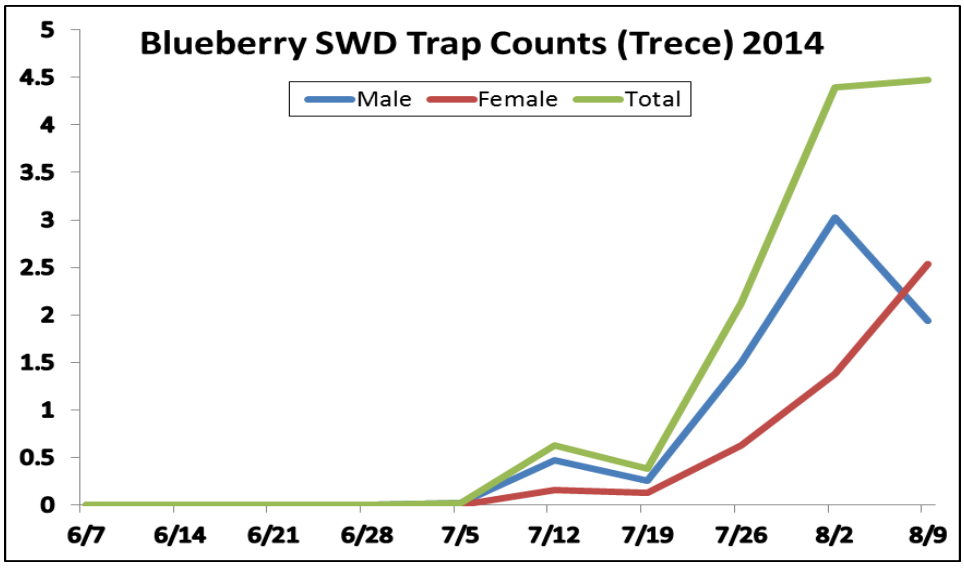
most farms mulch their blueberries. Why the change? We have to look at how we grow blueberries here. We use herbicides under the plants and we rototill the middles to control the weeds which are practices that are very effective but the lack of weeds does not allow organic matter to accumulate and rototilling burns up the natural organic matter. In addition, we routinely use a 10-10-10 fertilizer which usually contains nitrogen in the form of ammonium sulfate. The sulfate slowly drives the pH down, out of the optimum range for blueberries. With decades of these practices we now have to add lime to get the pH up and we have to mulch to replace the organic matter.

Growers should realize that there are also a few disadvantages to applying mulch. Many growers experience rodent problems under the blueberry plants when mulch is used because of the perfect environment created by the mulch for these animals. In addition, mulch creates the perfect environment for the grub larva of Japanese, Oriental, and Asiatic beetles. These larvae can be very destructive to blueberries and many plantings have been damaged by these insects. Mulch can also be expensive to purchase and also to apply. Lastly, I am often asked what kind of mulch is best for blueberries. I always answer, "Whatever material the grower can get for free." Often a grower can work with a local township to receive deliveries of wood chips from their utilities authority. Realize however that no matter what mulch is used, it is going to affect nutrient availability because the breakdown process ties up nitrogen. As a result, a higher application rate of nitrogen will be required and could be as high as double the rate without mulch. It is not possible to make a recommendation as to what the additional application should be because every mulch is different and breakdown varies with soil type, temperature, micro-organism activity, etc. Nitrogen levels in the plants should be monitored with yearly leaf analysis to determine how the mulch has affected nitrogen levels in the plant.

Insects

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent – Fruit

Spotted Wing Drosophila (SWD):



Most sites are recording SWD adults in traps, although trap counts are still much lower than last year at this time. The Trecé treatments are still capturing the most adults. Fields continue to be tested for SWD larvae, although these are fields no longer being harvested. Most sampled fields are showing 2-3 larvae per qt. of fruit. This is also significantly lower than last year at this time, but continues to indicate that even low trap counts DO NOT equal clean fruit.

Putnam Scale: Crawlers are now present on trap tapes that were placed on infested bushes. This is the start of Putnam scale emergence. If using Esteem, then treatments can be applied now. If using Diazinon, then wait until next week. No matter what the insecticide is, use enough volume

Life history: Scales feed on plant sap, decreasing plant vigor and fruit yield. Adult scales are protected from insecticide sprays by a waxy covering. These insects are common in older canes when not removed, and located mostly under loose bark. In New Jersey, the Putnam scale has two generations a year. It overwinters as second-instar nymphs under loose bark. Spring activity begins in early February. Eggs from the first generation are laid in late April, and immature "crawlers" begin to appear in mid-May. Peak crawler emergences occur in late May and early June. Peak crawler emergences for the second generation occur in early to mid-August (this time of the year).

Monitoring and Management. Growers that have a scale problem need to treat post harvest for the 2nd generation of crawlers (use Diazinon or Esteem). Crawlers can be monitored by wrapping black electricians' tape covered by double-sided sticky tape around canes. Use a hand lens to see crawlers on the sticky tape. Sprays should coincide with crawler emergence.

Sharpnosed Leafhopper (SNLH): The SNLH adult flight has started, but at very low levels. In past years, low counts in August have resulted in a late and drawn out 2nd generation emergence. It is too early to treat for SNLH at this time. This should be revisited during the last part of August or early September.

Life cycle – SNLH feeds and reproduce on blueberry, huckleberry, cranberry, and other related plants. SNLH feeding causes little direct damage but it transmits the phytoplasma that causes **stunt disease** in blueberries. They are small brown insects with a pointed head. SNLH picks up the disease while feeding on infested bushes and carries it to other plants in subsequent feedings. Usually only adults will carry the disease from plant to plant, since nymphs are wingless and can't fly. This insect completes two generations in New Jersey. Adults are abundant in the woods, where many alternative hosts are present, and may move to commercial blueberry fields in the spring. Eggs overwinter inside fallen leaves and hatch in mid-May. Nymphs complete 5 instars. Nymphs from the first generation reach adult stage in mid-June, while nymphs from the second generation reach adulthood in early August. Adults move back to the woods in the fall. Monitoring these generations is critical for timing of control strategies.

Monitoring and control – **This insect is the ONLY regular target for post harvest sprays**. Adults can be monitored using yellow sticky traps. First generation SNLH is often controlled with sprays targeted for plum curculio, aphids, and cranberry fruitworm. Treatment decisions for the 2nd generation should be based on individual population levels, as well as any history of stunt disease on your farm. Because adults migrate from woods, monitoring should be intensified in, and sprays should be directed to, the perimeter of fields to control migrants

carrying the disease. Insecticides are usually applied just prior to peak flight, which will probably be sometime near the end of August to early September. Note that Burlington County farms often have higher populations of SNLH than farms in Atlantic County.
In Burlington County with high SNLH populations, treatments may be needed by the middle of the month, and possibly again during the first half of September. If you are in Atlantic County, or have low SNLH populations, then 1 application should be applied late August to early September, if needed. We recommend use of Assail 30SG @ 3-5 oz, Actara @ 3-4 fl oz, Admire Pro @ 1-1.4 fl oz, Lannate LV @ 1.5 pt, or Malathion LV @ 10 oz per acre. It is also important to remove all plants that show symptoms of stunt disease. Removal of bushes should be done after insecticide treatment to avoid movement of leafhoppers from infested to healthy plants, thereby facilitating spread of the disease.

Blueberry Insect Trap Captures

Week Ending	BBM	SNLH
Burlington Co.		
7/26	0.06	0.06
8/2	0.055	0.0
8/9	0.0	0.0
Atlantic Co.		
7/26	0.33	0.0
8/2	0.2	0.0
8/9	0.27	0.083

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If you have any comments about this newsletter, please make them in the space below and mail to:
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I would like to see an article on the following subjects:_____

I would like to comment on the following articles:_____
Title:_____ Date:_____

Comment:_____

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