August 4, 2009 Volume 3, Issue 17

Michigan Blueberry IPM Newsletter

CONTENTS

Page
1 Blueberry news you can use...
Growing degree days
2 New EPA comment period on Guthion phaseout for blueberry
2 Insect management
3 Managing bud mite
5 Disease management


Covert


West Olive

Van Buren County
Jersey in Covert is in the middle of first harvest; in Grand Junction, Blueray is has been picked three times and Bluecrop is near the end of third harvest.

Ottawa County
The first harvest of Blueray in Holland is complete, and Rubel in West Olive is within 3 to 7 days of first harvest; Bluecrop in West Olive is near the end of first harvest.

BLUEBERRY NEWS YOU CAN USE...

Save the date! A town hall meeting will be held on September 24, 2009 from 9:00AM–12:00PM at the Trevor Nichols Research Complex in Fennville, MI to provide growers with information on the discovery of blueberry scorch and blueberry shock in Michigan.

Disease management: Now is an important time to scout for fruit rots as their incidence will generally increase with subsequent harvests.

Insect management: Maggot flies are being trapped in non-managed fields. Aphid numbers are still decreasing. Japanese beetle numbers are declining.

Take action: Additional EPA comment period on Guthion phaseout for blueberry is open until September 30. See page 2 for details.

Blueberry IPM Newsletter schedule: For the remainder of the season, the Michigan Blueberry IPM Newsletter will be published every other week. Look for the next issue on August 18.

GROWING DEGREE DAYS

From March 1

	2009		Last Year	
	Base 42	Base 50	Base 42	Base 50
Grand Junction, MI				
7/27	2369	1513	2394	1579
8/3	2558	1646	2617	1747
Projected for 8/10	2778	1810	2809	1883
West Olive, MI				
7/27	2152	1333	2182	1395
8/3	2326	1451	2393	1550
Projected for 8/10	2545	1613	2582	1682

See MSU Enviroweather website for more information.

EPA announces 60-day comment period on Guthion phaseout for blueberry

Rufus Isaacs, Department of Entomology, Michigan State University

A proposal has been made to the US-Environmental Protection Agency (EPA) to slow down the speed of restrictions in the Guthion phaseout, so blueberry, apple, and cherry growers have more time to develop and adopt effective and economical alternative programs. Anyone with interest in this proposed change is encouraged to make their opinions known by commenting to EPA over the next two months.

The manufacturer of Guthion (MANA) made a formal request to the EPA to keep the maximum seasonal limit of Guthion 50 WP for blueberries at 2 pound per acre, and to extend aerial application through the end of 2012. This would change the current phaseout plan that has reduction to 1.5 pounds maximum for 2010-2012, and a ban on aerial Guthion after Sept 2009. This does not change the plan to cancel all use of Guthion in blueberry after September 30, 2012.

In response to the request from MANA, the EPA has announced a comment period with a September 30, 2009 deadline. If you would like to make a comment on this proposal, details of the announcement and the instructions on how to comment can be found here: http://www.epa.gov/fedrgstr/EPA-PEST/2009/July/Day-22/p17398.htm. Comments can be submitted by mail, email, or through the www.regulations.gov website. All correspondence should include the docket ID number EPA-HQ-OPP-2009-0365.

❖

INSECT MANAGEMENT

Rufus Isaacs & Keith Mason, Department of Entomology, Michigan State University

Aphid numbers continue to decline in response to recent insecticide applications and activity of natural enemies such as syrphid fly larvae, lady beetles and parasitic wasps. Japanese beetle emergence continues, but numbers at the farms we scouted are still low. Blueberry maggot flies were not captured at the farms we scouted, but there are reports of maggot fly still being trapped.

Aphids were found only at the West Olive farm. Parasitized aphids (mummies) are still common and were found on 5 to 25% of new shoots at all of the farms we sampled. Growers and scouts should continue to monitor blueberry aphids and mummies to help assess the effectiveness of aphid management programs.

Leafroller larvae and tussock moth larvae were not observed at any of the farms.

No blueberry maggot flies were caught at any of the sampled farms, but growers should continue to monitor blueberry maggot flies throughout the harvest period. Flies have been captured in non-managed fields over the past week. Be sure to replace traps and ammonium baits as needed. If a field is going to be picked with a mechanical harvester, blueberry maggot traps should be moved out of the field and replaced after harvesting. For more on blueberry maggot, follow this link to a previous article in the Blueberry IPM Update.

Low numbers of Japanese beetles were observed at all four farms we sampled. Low levels of beetle feeding damage can be seen on leaves and fruit in some fields where beetle were present. Growers and scouts should continue checking fields for Japanese beetles (JB) throughout the harvest period. For more on Japanese beetle, click on this link to see an article from an earlier edition of the

Insect Scouting Results

Farm	Date	CFW moths per trap	CBFW moths per trap	BBA % infested shoots	BBM adults per trap	JB per 20 bushes
			Van Buren County			
Covert	7/27	--	0	0%	0	0
	8/3	--	--	0%	0	1
Grand Junction	7/27	--	0	0%	0	0
	8/3	--	--	0%	0	1
			Ottawa County			
Holland	7/27	--	1	0%	0	15
	8/3	--	--	0%	0	6
West Olive	7/27	--	1	5%	0	0
	8/3	--	--	5%	0	4

CFW=cherry fruitworm; CBFW=cranberry fruitworm; BBA=blueberry aphid; BBM=blueberry maggot; JB=Japanese beetle

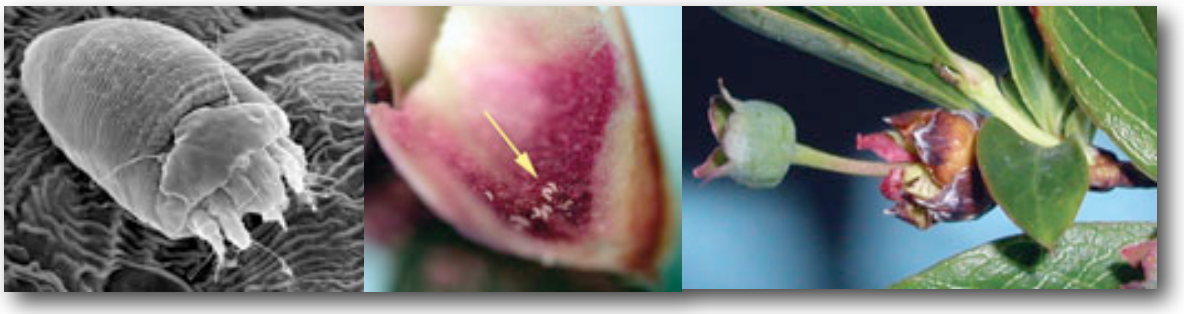
❖

Monitoring and controlling blueberry bud mite

Rufus Isaacs, Keith Mason & John Wise, Department of Entomology, Michigan State University

As harvest season comes to an end for some growers in southern counties, it is worth sampling fields that had poor bud development last season to determine whether treatment for bud mites is required in some fields during the immediate post harvest period.

Planning for bud mite control in fields that need it will help reduce Blueberry bud mite (Acalitus vaccinii) has been identified as the cause of some problems with poor growth and low yield in Michigan blueberry fields. Sampling by crop scouts, MSU Extension, and the Small Fruit Entomology program has detected this pest across most of the major blueberry production regions in our state. However, only some fields have sufficient populations to cause economic levels of injury, and only some cultivars are susceptible. For example, in Grand Junction we have seen Rubel bushes with high infestation and damaged growth growing next to Bluecrop plants that showed no visible symptoms. Because of this, bud mite management is warranted only in fields where 1) poor growth/damage have been seen, AND 2) high bud mite populations have been verified by magnified analysis of bud samples.



This mite is microscopic (left image), and feeds inside buds in the winter (middle image), causing damage to developing tissues and resulting in symptoms that include blistered red bud scales in spring, misshapen flowers, small leaves and fruit, or few berries per cluster (right image). Berries on infected shoots may also appear roughened and malformed.

The wide variability in symptoms among varieties adds to the difficulty in diagnosing this pest injury. It is important to take shoot samples in the fall as buds are being set or early spring to identify infestations. Bud mites move to fruit buds formed this year to find places to spend the winter, so fields should be sampled by taking 10 randomly-selected shoots and sampling the top five buds on each shoot for a total of 50 buds per field. These should be examined to verify that bud mites are the problem, because some of the symptoms are quite similar to the catch-all category of 'winter damage'. This can be done with a hand lens if you know what to look for, or can be done under a microscope by trained personnel. Send samples to your scout, local extension office, crop consultant, or to the MSU diagnostic lab (www.pestid.msu.edu) for checking. While there has been no research to develop an economic threshold, if 10% of the sampled buds are infested with bud mite, and the field is a susceptible variety, chemical control should be considered.

This pest can be challenging to control with pesticides because of its small size and the difficulty of getting miticide residues into the tiny cracks and crevices it inhabits. The immediate post-harvest timing is recommended for targeting this pest because the mites are relatively exposed before the buds have formed completely for the winter. Effective control is extremely difficult once the mites are protected under bud scales, and so prompt action is needed if a planting requires control of bud mites.

Chemical control options for bud mite. Registered miticide options for blueberry bud mite are limited, but include effective products (Table 1). Endosulfan-containing products such as Thiodan 3 EC, Thionex etc. are the most effective miticides for this pest, and these should be applied immediately post-harvest, with reapplication 2-3 weeks later in heavily infested fields. Although the label recommends waiting 6-8 weeks between the sprays, this was developed for southern US conditions, and in Michigan we do not have that long between the end of harvest and formation of next year's buds. That's why we recommend growers tighten up this period between sprays to get the second Thiodan spray on before complete bud formation. The label recommends that sprays be applied at high pressure (150 to 200 psi) and high gallonage to obtain effective coverage and penetration. Unless the interior spaces of the bud scales are wetted, it is unlikely that good control will be achieved. Use of a surfactant to improve the spreading and penetration of the spray is expected to increase control of bud mites.

Trials of new alternatives to Thiodan including Sulforix have been done at MSU and we have found that Sulforix provides moderate control of bud mites when applied in the fall. Many growers are using this for a disease control spray at the end of the season and can expect some level of mite suppression if used at this timing, but applications at leaf drop are later than the ideal timing for bud mite control.

Table 1. Miticide rates, timings, and efficacy for blueberry bud mite

Compound	Rate / acre	Application Timing	Avg. % control
Thiodan 3 EC, Thionex, etc.	2 qt	Post-harvest	93%
Sulforix	1 gal	Pre- or Post-harvest	60%
Summer oil	1% v/v	Delayed-dormant	27%

An additional option for population suppression of bud mites is the application in spring of a delayed-dormant application of oil. A high grade ultrafine oil applied at 0.5-1% by volume can help to reduce populations in the spring.

Our pesticide trials at the Trevor Nichols station during 2004-2006 tested options for bud mite control. Table 1 shows the average level of control (compared to untreated bushes) found in these trials for the main registered options for bud mite control.

Other management options. Pruning infested shoots from bushes is a cultural control that should be done to reduce infestation. In some southern states, bushes are 'topped' to cut off bud-mite infested shoots. Many growers leave prunings in the row middles and chop them in the row, but in fields infested with bud mite, the removed wood should be taken out of the field and burned or buried. Chopping this wood in the row middles may spread the mites back onto the bushes.

Biological control agents have been observed feeding on bud mite colonies. These include predatory mites and predatory thrips. While we still know little about the ability of these beneficial insects to control bud mites, it is likely that they are helping to suppress pest mite populations in Michigan blueberry fields.

DISEASE MANAGEMENT

Annemiek Schilder & Tim Miles, Department of Plant Pathology, Michigan State University

This week all scouted plots have been harvested multiple times. Newly formed mummies, anthracnose fruit rot clusters, and alternaria fruit rot clusters were scouted at 3 out of 4 of the plots. Mummy berry symptoms of newly infected fruits increased slightly at our West Olive site with an average of 60.9 newly mummified fruits being detected.

Furthermore, fruit rots were seen at higher levels in three out of four sites. The largest increase occurred at our West Olive site with an average of 1.3 anthracnose fruit rot clusters, and 0.6 Alternaria fruit rot clusters. Fruit rots generally increase with each harvest so now is an important to scout for fruit rots as they can occur in the field and post harvest.

Disease Scouting Results

Farm	Date	Avg number of newly-mummified fruits*	Avg number of infected anthracnose clusters per bush**	Avg number of infected Alternaria clusters per bush**
		Van Buren County		
Covert	7/23	2.9	0.0	0.1
	7/30	2.5	0.1	0.0
Grand Junction	7/23	108.2	0.0	0.2
	7/30	--	--	--
		Ottawa County		
Holland	7/23	6.9	0.1	0.0
	7/30	0.8	0.9	0.3
West Olive	7/23	47.1	0.0	0.0
	7/30	60.9	1.3	0.6

*Average based on scouting on and below 10 bushes.
**Average number based on 10 bushes.

Funding for this newsletter is provided by grants from the EPA and Project GREEEN.