May 12, 2009 Volume 3, Issue 5

Michigan Blueberry IPM Newsletter

CONTENTS


Bluecrop in Grand Junction


Blueray in West Olive

Van Buren County
Jersey in Covert are between late pink bud and trace bloom; in Grand Junction, Blueray is at late pink bud, and Bluecrop is approaching 25% bloom.

Ottawa County
Blueray in Holland is at mid pink bud, and Rubel and Bluecrop in West Olive are at late pink bud.

BLUEBERRY NEWS YOU CAN USE...

Disease management. Continue to look for mummy berry shoot strikes, if observed and open blossoms are present; consider protecting the blossoms with a fungicide application.

Insect management. Hang cranberry fruitworm traps now; flight should begin in about one week. Leafroller larvae are beginning to get active.

MSU Blueberry IPM Meetings. Our next IPM meeting is tomorrow! See details below.

Wednesday, May 13
(6-8PM), Cornerstone Ag, 01240 57th St., Grand Junction, MI. A catered dinner will be served at 6PM (pulled pork, chicken, potato salad, beans, fruit salad, dessert. Contact Mark Longstroth at 269-330-2790 if you have any questions.

Thursday, June 11
(6-8PM), Carini Farms, 15039 Port Sheldon Rd., West Olive, MI.

GROWING DEGREE DAYS

From March 1

	2009		Last Year	
	Base 42	Base 50	Base 42	Base 50
Grand Junction, MI				
5/4	441	216	429	230
5/11	427	196	525	282
Projected for 5/18	520	242	607	324
West Olive, MI				
4/27	327	142	344	169
5/4	552	279	428	211
Projected for 5/18	642	325	502	245

See MSU Enviroweather website for more information

WEED MANAGEMENT

Eric Hanson, Department of Horticulture, Michigan State University

Many growers have already applied their preemergent herbicides, but some fields have been too wet or growers are waiting a little longer before making applications. In most situations, the traditional preemergent herbicides such as Princep, Karmex, Sinbar, and Solicam will provide good control through the harvest period. If applications are delayed somewhat, control is extended later into the summer. This can be helpful if late-germinating annual weeds (pigweeds, crabgrass, fall pannicum, Figs. 1-3) are troublesome.

The new preemergent herbicide CALLISTO can be applied up until bloom, so there is still time to try this product on some fields. Callisto provides preemergent and postemergent control of several broadleaf weeds that are troublesome in blueberries, including several pigweed species, chickweeds, horsenettle, lambsquarters, marestail, eastern black nightshade, ragweed, and smartweed. Callisto has limited effect on grasses. Apply Callisto before bloom at up to 6 fl. oz. per acre. This amount may be split into two 3 oz. applications at least 14 days apart (too late for two applications in 2009). The addition of crop oil concentrate (COC) will improve postemergent activity, but Callisto with COC may injure blueberry leaves and young stems. Callisto can be used on young, non-bearing and bearing bushes. Avoid plant contact as much as possible.

If preemergent herbicides are applied later in the spring to try to prolong control later in the summer, they can be combined in some cases with postemergent materials to control weeds that have already emerged. The postemergent herbicides labeled for blueberries, their rates and typical costs are summarized in Table 1. Aim, Gramoxone, Rely, and Roundup all cause injury if they contact blueberry leaves and young, green stems. If nozzles are oriented so that the base of bushes is sprayed, injury will result. Although injury can be minimized by directing spray away from the base of bushes, it is a good idea only to use these products on larger vigorous bushes with abundant renewal canes, since a little injury can be tolerated. Also keep in mind that these postemergent herbicides do not good unless weeds are present when they are applied, and these weeds will not be controlled by your preemergent materials alone.

Lastly, this is about the time to use Fusilate (non-bearing bushes only) or Poast for control of quackgrass (Fig. 4). These materials must be applied to actively growing grass that is less than 8 inches tall to achieve good control. If shoots are taller (older), control is reduced. Fusilade and Poast are selective grass herbicides; then do not harm blueberries or any other broadleaf plants.


Fig 1. Pigweed


Fig 2. Crabgrass


Fig 3. Fall pannicum


Fig 4. Quackgrass

More weed identification images are available at http://blueberries.msu.edu/Weeds.html

Table 1. Rates and general cost of post-emergent herbicides for blueberry				
Product	**Common name**	**Rates (product/acre)**	**Price**	**Cost/treated acre**
Aim DF	carfentrazone	1-2 fl oz	$210/qt	$7-14
Fusilade DX 2E	fluazifop-butyl	1-2 pt	$140/gal	$17-35
Gramoxone Max 3L	paraquat	1.7-2.7 pt	$35/gal	$7-12
Poast 1.5E	sethoxydim	1-2 pt	$77/gal	$10-20
Rely	glufosinate	3-5 qt	$34/gal	$26-42
Roundup Ultra 4L	glyphosate	1-2 qt	$38/gal	$10-20

[1]Costs approximated from dealer quotes, January, 2009. Actual costs will vary with source.
[2]Product costs for treating an acre of ground. If band-applying under blueberry rows so half the ground surface is treated, costs would be half of those listed.

INSECT MANAGEMENT

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

The cool wet weather during the last week has kept insect activity low at all four farms we are scouting, but some feeding by leafroller larvae was seen at the Holland and Grand Junction farms, and a spanworm larva was observed at the West Olive farm. Growers and scouts should continue to look for spanworm and leafroller feeding in leaf (Fig. 5) and fruit buds (Fig. 6). With bees in the fields now, growers must exercise great care when using any insecticide. Insecticides that are applied to control fruitworms will also control spanworm and leafroller, so growers that expect to spray for fruitworms may not need a separate spray to control these other moth pests. A working threshold for control of early season leafroller and spanworm is 2% of the clusters with damage. Count 10 buds on 10 bushes spread through the field to pick up any hot-spots. Some very light feeding by the three lined flower beetle, Hoplia trifasciata, was observed at the West Olive farm. We expect the incidence of this beetle to continue to decrease over the next week.

Leafroller feeding in a leaf cluster (left) and in a flower cluster (right). Note webbing and frass.

Fruitworm activity is still low. A single cherry fruitworm moth was caught in Covert and cranberry fruitworm flight has not begun at any of the farms. As the evening temperatures rise, we expect cherry fruitworm flight to increase in southern counties (Berrien and Van Buren), and flight should begin in Ottawa county this week. Growers and scouts

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	5/4	0	set	--	--	--
	5/11	1	0	--	--	--
Grand Junction	5/4	1	set	--	--	--
	5/11	0	0	--	--	--
			Ottawa County			
Holland	5/4	0	set	--	--	--
	5/11	0	0	--	--	--
West Olive	5/4	0	set	--	--	--
	5/11	0	0	--	--	--

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

should already have cherry fruitworm and cranberry fruitworm traps set in fields. Traps should be checked twice weekly until moths are caught and then traps should be checked once a week until first harvest to monitor the flight of these pests.

The number of "contaminant" moths in cherry fruitworm traps is near zero, and we expect the flight of this insect to end this week. See the April 28th issue of the Michigan Blueberry IPM Update Newsletter for pictures of the contaminant moth and cherry fruitworm.

DISEASE MANAGEMENT

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

Mummy berry – Shoot Strikes!

This week mummy berry shoot strikes were observed at all of our scouted plots in Southwest Michigan (Fig. 7). The plots had varying numbers of strikes, with average counts this week as high as 12.4 per bush (Grand Junction) and as low as 0.2 per bush (Covert). Many of the observed apothecia in previous weeks have vanished. However, because of the latent nature of mummy berry ascospore infection (12-14 days), shoot strike symptoms are likely to still increase, so be on the lookout for shoot strikes in the next two weeks. Shoot strike symptoms consist of wilting of

developing leaves and shoots with a browning of the midribs and lateral leaf veins, often described as an "oak leaf" pattern of necrosis. Under humid conditions, gray spore masses will develop on these infected shoots. These spores (conidia) then get carried to the flowers by bees, wind, and rain, which then leads to infection and mummification of the fruit later in the growing season. Since most of the scouted plots are entering bloom, if shoot strikes are observed and open blossoms are present, protect the blossoms from infection with a fungicide application (e.g., Indar or Pristine).

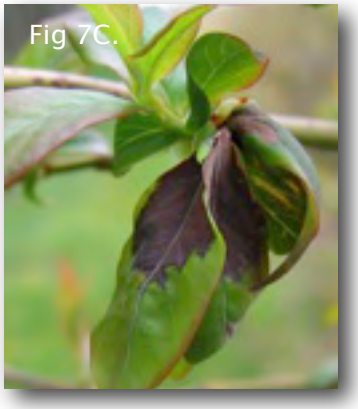

Fig 7 A–D. Shoot strikes observed on 5-11-09 throughout Southwest, MI: A) Covert, B) Grand Junction, C) Holland and D) West Olive.

Disease Scouting Results

Farm	Date	Avg number of apothecia on the ground*	Max apothecia cup diameter	Avg number of shoot strikes per bush*
		Van Buren County		
Covert	5/4	0.3	1/4 in (7 mm)	0.0
	5/11	0	--	0.2
Grand Junction	5/4	10.4	1/3 in (9 mm)	0.0
	5/11	0.9	1/3 in (9 mm)	12.4
		Ottawa County		
Holland	5/4	0.9	1/3 in (8 mm)	0.0
	5/11	0.1	1/3 in (9 mm)	0.9
West Olive	5/4	2.2	1/3 in (9 mm)	0.0
	5/11	0.5	1/3 in (9 mm)	4.9

*Average number based on 10 bushes.

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