



Blueberry Newsletter

A newsletter from Michigan State University for the Michigan blueberry industry

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MICHIGAN STATE UNIVERSITY

News you can use

Disease management. Monitor for twig blight symptoms and, if scouting reveals moderate to high incidence, consider a fungicide treatment (especially if rain is in the forecast). Continue to monitor and manage mummy berry shoot strikes if blossoms are still open.

Insect management. Cherry fruitworm egg laying has begun at sites in Van Buren, Allegan, and Ottawa Counties. Cranberry fruitworm biofix has occurred at some sites. Aphids are increasing at some sites.

Crop development. In Van Buren County, Jersey in Covert is finishing petal fall, and Bluecrop and Blueray have early green fruit in Grand Junction. In Ottawa County, Blueray in Holland, and Rubel and Bluecrop in West Olive are finishing petal fall.



Bluecrop at early green fruit in Gd. Junction



Blueray at late petal fall in West Olive

GROWING DEGREE DAYS

From March 1

	2010		Last Year	
	Base 42	Base 50	Base 42	Base 50
Grand Junction, MI				
5/17	779	410	634	324
5/24	951	529	796	434
Projected for 5/31	1129	652	942	527
West Olive, MI				
5/17	661	316	499	232
5/24	821	425	656	336
Projected for 5/31	1015	562	783	412

See <http://enviroweather.msu.edu> for more information.

Blossom & shoot blight: *Phomopsis*, mummy berry, *Botrytis*, Anthracnose

Blighted blossoms and shoots were seen at a low frequency in all four scouted fields. The average number of blighted blossoms/shoots per bush was still fairly low, but the highest incidence was seen at our Covert site averaging 4.9 blighted blossoms/shoots per bush (excluding mummy berry shoot strikes). The number of mummy berry shoot strikes per bush also increased this week. In our West



Fig 1. Blighted shoot observed near Covert on 24 May; photo: T. Miles.

Olive site, the average shoot strikes per bush increased from 49.6 (May 17) to 67.2 (May 24). Also, in our Grand Junction site average shoot strikes per bush increased from 27.2 (May 17) to 35.9 (May 24). In



Fig 2. Blighted flower cluster observed near Covert on 24 May. Note brown discoloration of subtending twig indicating the causal agent to *Phomopsis* or *Colletotrichum* (Anthracnose); photo: T. Miles.

Fig 3. Shoot strike symptoms observed near West Olive on 24 May; photo: T. Miles.



Michigan, four different pathogens can cause blossom/shoot blight. Just by looking at a blighted blossom it is often difficult to identify the causal agent unless fungal growth is visible. In many cases, the blighted blossoms looked like they were caused by *Phomopsis*, which can be identified by a brown discoloration of the twig that bears the flower cluster (Figs. 1, 2). Initially, the discoloration is ¼-½ inch long, but can expand to several inches long. In the case of mummy berry, a layer of gray powdery spores is restricted to the flower and/or cluster stem (Fig. 3). *Botrytis* blossom blight may occur after very wet and cool weather and is characterized by fluffy grayish brown spores all over the blossoms. This is less likely considering the weather conditions we have had so far. Anthracnose blossom blight does not have very diagnostic features and looks like *Phomopsis* twig

blight. Incubation in the laboratory is necessary to identify the causal agent.

Shoestring virus symptoms seen

This week clear symptoms of shoestring virus were noted at the Grand Junction site. Shoestring virus is spread from plant to plant by blueberry aphids, and this disease can cause yield reductions. Fruit that is harvested from an infected bush can show a reddish purple color, which lowers the fruit grade. Some common symptoms for shoestring include: elongated reddish streaks on green stems (especially on the side exposed to the sun) and red or purplish, elongated and strap-



Fig 4. Shoestring symptoms observed near Grand Junction on 24 May. Note the reddish elongated strap-like leaves; photo: T. Miles.

like leaves (Fig. 4). The main control strategy for shoestring virus is to apply well-timed insecticides to control spread by aphids, starting in late May or early June as the aphid population begins to build up. Furthermore, when planting new fields, growers should use virus-tested stock as a preventative measure.

Tim Miles & Annemiek Schilder
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Table 1. Disease scouting results.

Farm	Date	Avg number of apothecia on the ground*	Avg number of shoot strikes per bush*	Avg number of blighted blossom/shoots per bush
VAN BUREN COUNTY				
Covert	5/17	0	1.1	< 1
	5/24	0	1.3	4.9
Grand Junction	5/17	0	27.2	< 1
	5/24	0	35.9	1.6
OTTAWA COUNTY				
Holland	5/17	0	1.6	< 1
	5/24	0	1.7	0.6
West Olive	5/17	0	49.6	< 1
	5/24	0	67.2	1.6

*Average of 10 bushes.

Insect activity rising

Insect activity at the farms we scouted increased with the warm weather of late, and with predicted warm temperatures and resulting degree day accumulations, that trend will continue. Cherry fruitworm moths were caught at all the farms we scouted (Covert, Grand Junction, Holland and West Olive), and cranberry fruitworm moths were caught at the Covert and Grand Junction farms. We expect that cherry fruitworm is near the peak of its flight and cranberry fruitworm flight should increase over the next week. All farms were scouted for egg-laying and feeding by fruitworms. Cherry fruitworm eggs were observed at the Covert, Holland and Grand Junction farms, but cranberry fruitworm eggs were not seen. No fruitworm feeding damage



Fig 5. Aphid colony on the underside of a leaf; Photo: K. Mason.

was seen at any of the farms we checked. Egg-laying by cherry fruitworm should increase this week at the farms we monitor in Van Buren and Ottawa counties. Consistent captures of cranberry fruitworm moths have been recorded at the Covert and Grand Junction farms. This is the start (biofix) of the cranberry fruitworm model at these sites and egg-laying for this pest is predicted to start early this week.

Growers and scouts should check traps for cherry fruitworm and cranberry fruitworm twice weekly until moths are caught consistently. This will identify fields with pressure from fruitworm pests, and will enable identification of the start (biofix) of the [cranberry fruitworm model on enviroweather.msu.edu](http://cranberryfruitwormmodel.onenviroweather.msu.edu). This model can be used for predicting optimal spray application dates for controlling

Table 2. 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	5/17	1	0	0	--	--
	5/24	2	3	5	--	--
Grand Junction	5/17	0	0	0	--	--
	5/24	1	1	5	--	--
OTTAWA COUNTY						
Holland	5/17	1	0	0	--	--
	5/24	2	0	0	--	--
West Olive	5/17	1	0	10	--	--
	5/24	7	0	10	--	--

cranberry fruitworm. Fields should also be checked for fruitworm feeding damage to determine the level of control in the field and to identify hotspots for future treatments. For more info on these pests, see the [fruitworm pages on the blueberries.msu.edu website](http://fruitwormpagesontheblueberries.msu.edu).

Aphid colonies were seen at the West Olive, Grand Junction and Covert farms, and we are still getting reports of aphid activity at other farms in southwest Michigan. We have not seen any parasitized aphids yet. Growers and scouts should be checking bushes for aphid colonies (Fig. 5), particularly on farms where there are varieties that are susceptible to shoestring virus.

Leafroller larvae and a gypsy moth larva were seen at the Holland farm, but not at any of the other farms we visited. The European snout beetle was not seen at any of the farms and it is likely that this nuisance insect is done for the season. Eastern tent caterpillar larvae can still be found in fields that are adjacent to woods. Growers and scouts should continue to check fields for feeding damage by [leafroller](#), [tussock moth](#), and eastern tent caterpillars during the next week. These pests are generally more common in areas bordering woods.

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2010 grower meetings

JUNE 10 6:00PM

Pre-harvest meeting - Van Buren County

Location: True Blue Farms

09548 CR 215, South of Grand Junction

Information: Mark Longstroth, 269-330-2790

JUNE 17 6:00PM

Pre-harvest meeting - Ottawa County

Location: Carini Farms

15039 Port Sheldon Rd., West Olive

Information: Carlos Garcia, 269-260-0671

JUNE 24 6:00PM

Weed Control Demo - Allegan County

Location: Getzoff Farm

7093 116th St., Fennville

Information: Paul Jenkins, 517-648-5099



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