M I C H I G A N

Blueberry Newsletter

A newsletter from Michigan State University for the Michigan blueberry industry

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News you can use

Crop development. In Van Buren, Jersey in Covert is between first and second harvest and Bluecrop and Blueray in Grand Junction have been harvested three times. Some fields will be machine harvested a final time.

In Ottawa County, Bluecrop in West Olive is at the beginning of third harvest.

Insect management. Aphid and Japanese beetle numbers are still declining. Blueberry maggot flies are still present in some fields, but captures are down. Keep checking spotted wing Drosophila traps.

Bluecrop in West Olive

Bluecrop in Grand Junction

GROWING DEGREE DAYS

From March 1

	2011		Last Year	
	Base 42	Base 50	Base 42	Base 50
Grand Junction, MI				
8/8	2995	2067	3288	2261
8/15	3182	2198	3547	2464
Projected for 8/22	3379	2339	3768	2629
West Olive, MI				
8/8	2718	1842	3026	2026
8/15	2900	1968	3275	2219
Projected for 8/22	3101	2113	3486	2374

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

MICHIGAN STATE UNIVERSITY | Extension

Cool down begins in SW Michigan

Mark Longstroth
Michigan State University Extension
Van Buren County

Weather the first 2 weeks August has been cooler. High temperatures have fallen from the upper 80s into the 70s. Lows last week were in the 50s. This week is forecast to be warmer with highs in the 80s and night time lows around 60. Pulses of storms across the region bring several inches of rain each week. Storms Saturday, August 13 delivered over 2 inches north of I-94, but many areas to the south received less than a half inch. Soil conditions range from very wet to dry. For most blueberry growers all this rain has been too much of a good thing. The rainy growing season has many growers complaining that weed control is failing. Crabgrass seems particularly troublesome this year. Heavy rains have leached herbicide residues out of sandy sites and summer weeds are off to a good start. Soil temperatures are similar to the average air temperature. The hot summer has the region at or ahead of normal for heat accumulation (GDD). Check the closest weather station at: enviroweather.msu.edu.

Southwest Michigan Growing Degree Day Totals from March 1 through August 14, 2011			
Location	**GDD 42**	**GDD 45**	**GDD 50**
Bainbridge	2972	2596	2017
Fennville:	2788	2427	1867

Small Fruit. Japanese beetles numbers are declining. Look for them congregating in preferred feeding areas. Spotted wing drosophila flies have been caught in Allegan, Van Buren and Ottawa counties.

Blueberry

harvest continues across the region. . Fruit cracking from rain and soft fruit from delayed harvest are problems for some. Machine harvest of Bluecrop is ending Jersey, Rubel and other varieties are being machine harvested. Yields in Jersey are all over the board. Some growers have good yields and are now in their second or third pickings while other skipped Jersey and moved directly into Elliotts. Hand harvest crews are scarce and smaller growers report that labor is hard to find. We are at the end of the window for taking leaf samples for tissue analysis. Cane collapse from phomopsis cane blight continues but has not been as severe as in recent years, or as severe as I would have expected from the cane dieback visible this spring. Insects of concern include Japanese beetle and blueberry maggot. Abandoned and poorly sprayed fields are infested with blueberry maggot and this fruit is unsellable. Anthracnose remains the most common fruit rot in ripening fruit. Harvest sprays should protect fruit from maggot, anthracnose and alternaria.

Changes to Michigan Blueberry Newsletter and MSU blueberry website for 2012

Mark Longstroth
Michigan State University Extension
Van Buren County

2011 marks the last year that we deliver the Michigan Blueberry Newsletter in this format. Next year links to all blueberry articles will be delivered to you as they are posted on the internet. This year's newsletter was funded through generous matching contributions by MBG-The Blueberry People and the Michigan Blueberry Advisory Committee. Funding in 2011 helped maintain Paul Jenkins' efforts to produce and distribute this newsletter. However, Paul's appointment changed as of January 1, 2011 and he will focus on grape and wine moving forward. Another part of the reorganization is that Mark Longstroth now focuses on Blueberries and the Blueberry Industry.

We still plan on delivering information to the Blueberry Industry quickly and in a form that is easily accessible. Another part of the Reorganization of MSU Extension was a significant change in how information is delivered to growers and other clientele. Some newsletters are being phased out and replaced by the MSU Extension News for Agriculture Website at http://news.msue.msu.edu/news/home. This website has been very well received and gets more traffic than older MSU Fruit information sites. Extension Educators and Faculty submit information to this site and it is posted in the appropriate section that day. Blueberry articles are currently posted in the fruit section. This winter the MSU Blueberry Facts website at http://www.blueberries.msu.edu/ will be updated and all the blueberry articles that appear at the MSU Extension News for Agriculture site will also appear on the front page of the Blueberry website. In addition the new Blueberry Website will be equipped with RSS (Really Simple Syndication) feeds so you can sign up for the RSS feed and receive a short announcement by email or on your smart phone whenever a new blueberry article is posted on the site. These announcements will have an introduction and link to the article. You can see what blueberry information is at MSU as soon as it is posted rather than waiting for the newsletter to be prepared and distributed. We are very excited about these new changes and think this will actually improve service to Your Industry. If you have comments or suggestions please send them to Mark Longstroth @ longstr7@msu.edu.

West Central Report

Carlos Garcia-Salazar
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Ottawa County

Hot weather in the past weeks was a problem in blueberries. High temperatures create problems when the fruit becomes soft, increasing the risk of fruit rots. Soft fruit can't be packed for the fresh market and has to be diverted for processing. Harvest of blueberries has some problems related to weather

conditions and labor availability. Fields planted with the variety Bluecrop are finishing harvest. Elliott fields are being harvested in Allegan and Van Buren counties. The fruit from the first harvest of Elliott is of very good quality. North of Allegan, this variety is approximately two weeks behind with respect to the Bluecrop harvest. In addition to hot weather, intermittent rains have caused problems for harvesting. In some places both hand and mechanical harvest have been interrupted or conducted under difficult conditions due to excessive moisture in the field. Another problem affecting blueberry harvest is a deficit of pickers. There aren't enough workers for hand harvesting. Small growers in particular can't find people to help them with harvest, so a large number of fields are being machine harvested. The shortage of laborers is a consequence of immigration problems and the past years' troubles with the Labor Department.

One problem in particular requires growers' attention; stealing of blueberries. Growers in Allegan County are suffering subtractions of large quantities of fruit by thieves that enter blueberry fields at night. In several instance growers ready to harvest are finding they have no ripe fruit left in their fields only green berries. Growers need to be alert and report any suspicious activity in their fields.

Japanese beetles have been the major problem for blueberries in the region. Growers have been forced to spray insecticides before harvest to keep beetles away from the crop. Applications of insecticides against the Japanese beetles are mainly Aqua Malathion, Imidan, Mustang Max and Danitol. These insecticides are giving good protection when applications are well-timed. Under the current market demands regarding food safety, Japanese beetles are not only a food contaminant but also a food safety biological hazard that requires attention. When applying insecticides close to harvest, pay close attention to the pre-harvest interval (PHI) on the product's label. If the pre-harvest interval is 1 day, it means 24 hours. This is very important from the stand point of food safety. ***If fruit is harvested before the 24-hour period, pesticide residues may become a health risk for consumers that may have hypersensitivity to some chemical products (environmental allergies).***

Other insects of concern in blueberries are blueberry maggots and spotted wing Drosophila. No problems are reported with blueberry maggots. Scouting for spotted wing Drosophila has continued, and so far, most of the flies have been trapped in Allegan County. Single flies have been trapped in both Van Buren and Ottawa counties. In Kent and Muskegon Counties no spotted wing Drosophila flies have been found, yet, however, we are continuing monitoring in blueberries and raspberries. Due to insecticide applications against Japanese beetles and blueberry maggot, it is possible that this season we will see spotted wing Drosophila only at the end of harvest when no more insecticide applications are occurring. Growers that installed traps in their fields and require assistance to identify trapped flies, please call your Extension office for assistance, or Carlos Garcia at 616-260-0671. You may also bring samples to Ottawa County Extension (Fillmore Complex) in West Olive, MI or to the Trevor Nichols Research Complex (TNRC) in Fennville, MI (phone: 269-561-5040).

Insect update

Keith Mason & Rufus Isaacs
Department of Entomology
Michigan State University

The abundance of blueberry aphids has continued to decrease at the farms we scout, and aphid numbers are very low. We are seeing fewer aphids than parasitized aphids and aphid predators than in those fields. Growers and scouts should continue checking bushes for aphids, particularly in fields that have varieties that are susceptible to blueberry shoestring virus.

Blueberry maggot flies were captured at the West Olive farm over the past two weeks, but numbers are low and declining even more. We are still receiving reports of captures of blueberry maggot flies at several other blueberry farms in southwest Michigan. Blueberry maggot traps should be monitored until harvest, and be sure to replace traps that are covered in insects or debris. Also be sure that the bait chargers on these traps are full. See the article in the June 28, 2011 edition of The Michigan Blueberry IPM Newsletter for additional information on monitoring and control of blueberry maggot.

The number of Japanese beetles in the fields we scouted has continued to decrease over the past two weeks as some fields are between harvests and growers have applied insecticides targeting Japanese beetles. Low numbers of beetles were seen at the Grand Junction and West Olive farms on 8 August, but no beetles were seen at any of the farms we scouted on 15 August. Beetles still are most often found on perennial weeds such as five-leaf ivy and wild grape that is growing in fields. Japanese beetle feeding damage can be readily seen on blueberry leaves, and some damage is visible on fruit (Fig. 1). However most damage appears to be over a week old. To monitor for Japanese beetle, examine 10 bushes on the field border and 10 bushes in the field interior and record the number of beetles on each bush. Keep in mind Japanese beetles are normally more common adjacent to grassy areas on sandy soils, and they prefer to be in sunny areas. Be sure to check any five-leaf ivy, wild grape or sassafras growing in fields as these plants are very attractive to Japanese beetles. Regular monitoring will aid growers and scouts in timing control measures to keep fields clean of Japanese beetles before harvest, and reduce the possibility of contamination during picking. Read more about Japanese beetle in the in-depth article in the July 26th edition of the Michigan Blueberry IPM Newsletter or at the blueberries.msu.edu website.

Table 1. Insect scouting results.

Farm	Date	CFW moths per trap	CBFW moths per trap	BBA infested shoots (%)	SWD adults per trap	BBM adults per trap	JB per 20 bushes
			VAN BUREN COUNTY				
Covert	8/8	-	-	0	0	0	0
	8/15	-	-	0	0	0	0
Grand Junction	8/8	-	-	5	0	0	9
	8/15	-	-	5	0	0	0
			OTTAWA COUNTY				
West Olive	8/8	-	-	0	0	3	8
	8/15	-	-	5	0	1	0

CFW=cherry fruitworm; CBFW=cranberry fruitworm; BBA=blueberry aphid; SWD=spotted wing drosophila; BBM=blueberry maggot; JB=Japanese beetle

No spotted wing drosophila (SWD) flies have been trapped at the farms we monitor for this newsletter, however a total of twenty flies have been captured in southwest Michigan so far this season. Most of these flies have been caught in or near minimally managed blueberry fields in Allegan county. For more information about this new invasive pest, please check out the MSU spotted wing Drosophila page at www.ipm.msu.edu/SWD.htm.

Fig 1. Japanese beetle feeding damage; ***Photo: K. Mason.***

Spotted Wing Drosophila catches are picking up: Maintain monitoring if fields are still ripening

Rufus Isaacs & Steve Van Timmeren
Department of Entomology
Michigan State University

Widespread monitoring in commercial fruit farms across Michigan by MSU research and extension staff has so far detected SWD at only a small proportion of the hundreds of sites where traps are deployed. The pattern that we are seeing from this monitoring has three main components: 1) SWD is active in the regions of the state that had the highest catches last year (detected so far in Van Buren, Ottawa and Allegan counties in 2011) and again at some of the farm with high counts in 2010; 2) it is being suppressed by many of the typical insect management programs being applied for blueberry maggot/ Japanese beetle; 3) SWD becomes most active in mid-late summer. The current weather conditions of daily high temperatures in the 70s are ideal for reproduction and growth of this pest,

and so we expect trap catches to climb in the coming weeks.

Catches of SWD are increasing at a few of the sites we are monitoring, and the patterns of detection are providing insight into where SWD are most likely to be found. The majority of sites where SWD has been detected are in traps in wild areas close to crop fields, indicating a risk to fields from the outside by this new pest. The catches over the past week indicate that activity of spotted wing Drosophila (SWD) is increasing: the average number of flies trapped has gone up, and the number of sites with catches has increased. This is clearly seen by finding 30 SWD (11 females, 19 males) in monitoring traps over the past week, whereas we had only trapped 15 flies in the previous weeks this summer.

The flies trapped this week have been found in yeast traps, and not in the standard apple cider vinegar baited traps. These captures have mostly been at sites where the fruit are ripe, suggesting that the yeast can compete better with the ripening fruit than the apple cider vinegar. However, for this season we still recommend that scouts and consultants use the apple cider vinegar traps because these have been reliable for trapping this pest in previous studies in Michigan and in other regions. If you are interested in trying the yeast traps, the recipe we are using is 4 Tbsp sugar: 1 Tbsp Red Star active dry yeast: 12 oz water, with about an inch depth of this mixture per trap. The yeast traps catch many more 'other' species, creating a challenge for sorting through the other insects to look for SWD. Accurate identification is important, and we have found native fly species this season that have some similar characteristics to SWD. Our approach has been to look for the spot on the wing AND the dark combs on the foreleg to identify male SWD, and for female SWD it is still critical to look at the ovipositor. This can be challenging without a microscope, so we still encourage scouts and consultants to send samples to MSU Diagnostics if they have a question. Images of the main features for identification of SWD can be found at www.ipm.msu.edu/SWD.htm.

In our monitoring of alternate hosts for SWD in Michigan fruit farms, we have this week also detected SWD reared out of wild blackberries. These fruit were collected in the adjacent habitat and in weeds at a non-managed crop field. This highlights the importance of wild hosts for this insect's ability to reproduce, as well as the importance of controlling perennial fruiting weeds inside crop fields. As the fall approaches, make plans to control weeds such as wild blackberry, wild raspberry, Virginia creeper, wild grape and other plants that will provide alternative sites for SWD egg laying.

Our research team is actively engaged in testing insecticides for SWD control in Michigan blueberries this summer. We are in the middle of some trials where insecticides are applied in the field and then the treated shoots are brought back to a laboratory and exposed to SWD flies at different times after the application. Based on the results of our most recent field assays, we have found that 1 day old residues of Delegate (6 oz), Imidan (1.33 lb), and Malathion (32 oz) have the highest activity against SWD. Lannate (1 lb) and Entrust (2 oz) had intermediate levels of activity, whereas Mustang Max (4 oz) and Pyganic (64 oz) had low activity. Growers should use this information plus the pre-harvest interval restrictions, and any potential MRL considerations, when making decisions regarding which insecticide to use to protect fruit against SWD. For example, Delegate and Imidan have 3 day PHIs in blueberry, whereas Malathion has a 1 day PHI.

2011 Grower Events

Great Lakes Fruit, Vegetable, and Farm Market Expo
December 6-8, 2011
DeVos Place Convention Center, Grand Rapids

SW Hort Days
Early February, 2012
Lake Michigan College, Benton Harbor

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