

Wisconsin Horticulture Update Summary, June 6, 2014

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WI WEATHER REVIEW

Intermittent rainfall throughout the week disrupted alfalfa harvesting and prevented farmers from planting the last intended acres of corn, oats and potatoes. Showers and thunderstorms soaked much of the state on June 1 and 2, with more than two inches of precipitation reported in parts of southern and central Wisconsin. The rain benefited winter wheat, pastures and emerging summer crops, although excess moisture remains a problem in some fields. At the start of June, the outlook for the state's field crops is very favorable, despite recent heavy rain and a sluggish start to the planting season.

Average soil temperatures at 2" as of May 29, 2014: Hancock 68.7, Arlington 80.0.

Growing degree days (GDD)

Growing degree days is an accumulation of maximum and minimum temperature averages as related directly to plant and insect development. This week, the GDD_{mod50} in Wisconsin ranged from 238 to 610. Following is a list of GDD as of June 04, 2014 for the following cities: Bayfield 238, Beloit 610, Crandon 312, Cumberland 366, Eau Claire 448, Fond du Lac 308.0, Green Bay 345, La Crosse 526, Madison 524, Milwaukee 400, Wausau 360. To determine the GDD of any location in Wisconsin, use the degree day calculator at the UW Extension Ag Weather webpage http://www.soils.wisc.edu/uwex_agwx/thermal_models/degree_days

To put it in perspective, following is an abbreviated list of plant and insect phenological stages in relation to GDD accumulations at which the events occur (Ohio State BYGL): sargent crabapple, first bloom, 230; common lilac, first bloom, 234; Ohio buckeye, first bloom, 245; common horsechestnut, first bloom, 251; **hawthorn lace bug, adult emergence, 253; hawthorn leafminer, adult emergence, 260;** flowering dogwood, first bloom, 263; red buckeye, first bloom, 265; blackhaw viburnum, first bloom, 269; **imported willow leaf beetle, adult emergence, 274;** Sargent crabapple, full bloom, 298; red horsechestnut, first bloom, 304; **pine needle scale, egg hatch - 1st generation, 305; cooley spruce gall adelgid, egg hatch, 308; eastern spruce gall adelgid, egg hatch, 308;** common lilac, full bloom, 315; 'Pink Princess' weigela, first bloom, 316; blackhaw viburnum, full bloom, 322; redosier dogwood, first bloom, 323; dwarf fothergilla, full bloom, 325; 'Winter King' hawthorn, first bloom, 328; **lilac borer, adult emergence, 330;** slender deutzia, first bloom, 338; Japanese kerria, full bloom, 342; common horsechestnut, full bloom, 344; red chokeberry, full bloom, 351; doublefile viburnum, first bloom, 353; Pagoda dogwood, first bloom, 363; red Java weigela, first bloom, 365; black cherry, first bloom, 368; common sweetshrub, first bloom, 371; **lesser peach tree borer, adult emergence, 372;** Ohio buckeye, full bloom, 374; **holly leafminer, adult emergence, 375;** Vanhoutte spirea, full bloom, 406; **euonymus scale (first generation), egg hatch, 406;** black cherry, full bloom, 419; Miss Kim Manchurian lilac, first bloom, 422; **locust leafminer, adult emergence, 437;** doublefile viburnum, full bloom, 444; black locust, first bloom, 467; common ninebark, first bloom, 478; **oystershell scale, egg hatch, 497;** smokebush, first bloom, 501; catawba rhododendron, full bloom, 503; white fringe tree, full bloom, 517; arrowwood viburnum, first bloom, 534; American yellowwood, first bloom, 546; **bronze birch borer, adult emergence, 547;** multiflora rose, first bloom, 548; black locust, full bloom, 548; **emerald ash borer, adult emergence, 550;** American holly, first bloom, 556; mountain laurel, first bloom, 565; **potato leafhopper, adult arrival, 568; juniper scale, egg hatch, 571;** common ninebark, full bloom, 596; American yellowwood, full bloom, 599; arrowwood viburnum, full bloom, 621; and multiflora rose, full bloom, 643.

INTRODUCTION

The host for today's WHU was Milwaukee Co. consumer educator, Sharon Morissey. PDDC Director Brian Hudelson, Insect Lab Interim Director P.J. Liesch and Krystelle Guedot, from UW Entomology were special guests. Participants in today's discussions were representatives from the following counties: St. Croix (Heidi), Brown (Vijai Pandian), Columbia (George Koepp), Eau Claire (Erin La Favre), Jackson (Trisha), LaCrosse (Steve), Marquette

(Lyssa Seefeldt), Milwaukee (Sharon Morrissey), Pierce (Diana Alfuth), Portage (Walt), Rock (Christy), Spooner (Kevin Schoessow), and Waukesha (Kristin Krokowski).

HORTS' SHORTS

Agents report the following issues: Locally heavy rainfall in St. Croix and Pierce county with some flooding, otherwise great weather around the state; many questions about dead evergreens, trees not leafing out, early senescence of treated ash last year with no leafing out this year; oodles of maple seedlings carpeting the landscape, maybe due to heavy snow cover preventing access for feeding; lots of questions about trees, especially whether to treat Ash, and about EAB; weed ID, turf questions, winter burn on evergreens; lilacs and viburnums are in full bloom; it is looking like a banner year for both deer ticks and larger ticks. In Jackson county, weather has been great, but blueberry growers are worried about winter dieback and lack of bloom; some calls about cutworms in gardens damaging young transplants. In Portage county, lots of tree questions about poor leafing out; garden manuals donated by a retired professor of UW-SP that run the gamut from orchids to cactus, will be made available to MGVs. Other concerns are flea beetles on beans and whether it is too late to plant a garden. Mosquitos and flea beetles are rampant, and spittlebugs are increasing. In Brown county topics of interest were gelatinous orange blobs of apple cedar rust showing up on juniper, maple bladder gall mites, oak galls, reports of ash leaf drop, dieback on hawthorns. Lilacs are nearing end of bloom. In Rock county, there was an unusual report of a pin oak not leafing out but client just removed the tree so no sample could be obtained.

There was quite a lot of concern about retarded budding or outright dieback on apples and grapes. Most of the questions were from homeowners with a few trees, some queries were from growers with 30-50 trees. Is it the leafroller which causes such poor development? Should we just tell people to wait it out to see what survives or recommend pruning to budding wood? Is it possible these were just varieties with marginal hardiness?

http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Flea_Beetles.pdf

<http://www.entomology.umn.edu/cues/Web/199Spittlebugs.pdf>

SPECIALIST REPORT: Insect Diagnostic Lab Update

Presented by P. J. Liesch, Interim Assistant Faculty Associate, UW-Madison Department of Entomology, and Interim Manager of the UW-Extension Insect Diagnostic Lab pliesch@wisc.edu

It is getting busier in the lab as weather warms up, with 60 submissions this week already.

Eastern Tent Caterpillars

We have accumulated enough GDD that these caterpillars have stopped feeding and started pupating, so it is too late to do much about them. It is getting busier in the lab as weather warms up, with 60 submissions this week already.

http://na.fs.fed.us/spfo/pubs/pest_al/etc/etc.htm

Tiger and Goldsmith beetles

Tiger beetle is common shiny metallic green beetle, that folks wanted to make sure wasn't EAB. A picture came in of a Goldsmith beetle; it is similar to a June beetle but it is beige with a shiny gold head. It is one of the prettier beetles and P.J. was glad for the submission as he did not know it was here.

Tiger beetle: http://www.fcps.edu/islandcreekes/ecology/six-spotted_tiger_beetle.htm

Goldsmith beetle: http://animaldiversity.ummz.umich.edu/accounts/Cotalpa_lanigera/

Entomophthora fungus killing flies

The wet weather is conducive to Entomophthora fungus that infects flies and other insects, hijacks their brains and makes their wings fuzzy. The flies climb up to a high point on the plant to die and open their fuzzy wings to allow

the sporulating fungus to disperse in the wind. A picture came in of a fly on a hop vine, and P.J. saw it on silver maple in his yard. The fungus may also infect other insects, like box elder bug. Wet weather may encourage natural pathogens to control some species.

http://botit.botany.wisc.edu/toms_fungi/mar2000.html

Questions

No Eastern Tent Caterpillar reports in Pierce County. Did the winter kill the eggs?

Eggs overwinter on the ends of the twigs and the cold winter may have killed them. It appears that numbers are down in the southern part of the state, as it used to be that every black cherry had a tent on it. Eau Claire county has had reports.

SPECIALIST REPORT: Plant Diagnostic Disease Clinic

Presented by Brian Hudelson, Sr. Outreach Specialist, UW-Plant Pathology, and Director of the UW-Extension Plant Disease Diagnostics Clinic (PDDC) bdh@plantpath.wisc.edu

The PDDC update is attached to the end of this summary.

Natural thinning of Ash trees

Reports of ash leaf drop coming in, but it is a common phenomenon every year. It is important to educate people that is normal and probably not due to EAB.

Phyllosticta on Fir

Fungus causes interior needle browning.

Rhizosphaera

This fungus continues to be an issue.

Winter Injury

Samples still coming in with winter injury.

Botrytis Sclerotia on Rose Canes

Rose canes had died back. Botrytis sclerotia were present on the canes. Sclerotia are resting structures of the fungus which overwinter. Botrytis causes dieback, with browning and dying of flower buds. On leaves, the sporulating fungus presents as discrete spots with feathery edges.

http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Gray_Mold_Botrytis_Blight.pdf

Blackened Foliage on Peony

A peony sample was submitted with blackened foliage and dieback. The symptoms are similar to Botrytis, but lesions are not completely consistent. The diagnosis is ongoing and more information will be given next week.

Questions

Botrytis on peony

By putting the tissue in a bag, foliage showed sporulation. Botrytis has discrete round spots with feathery edges. Be careful about diagnosis as it may also be bacterial. Prune out diseased tissue and remove it, then apply a copper containing fungicide that is labeled for herbaceous plants to protect the new tissue. Mancozeb or another copper containing product can be used as it is the metal ions that give control. For lilac, the recommendation is a mixture of a copper fungicide and mancozeb. With the wet weather this year, botrytis is expected to be common.

What are long-term cumulative effects of apple scab, powdery mildew, cedar apple rust infection in predisposing to winter injury?

We are still seeing lingering stress effects of the drought of 2012 and heavy fruiting in 2013 which impacted the winter hardiness especially this past winter. Continuous apple scab infection doesn't usually kill the tree, but can predispose the trees to other infections and winter injury that weakens them long term.

SPECIAL TOPIC: Brown Marmorated Stink Bug

Presented by Christelle Guedot, UW-Extension fruit entomologist and member of the UW-Madison Department of Entomology

History

Brown marmorated stink bug is native to Asia: China, Korea and Japan. It is thought that it was introduced to the US through shipping and was first detected in Allentown, PA in 1996. It has established slowly, but now both coasts have had detection and it had been detected in 40 states by May 2013 and 41 states by May 2014. There is a website which shows a map of states with different colors for detections of the bug, which states have nuisance populations, which states have nuisance and agricultural problems, and which states have severe agricultural impacts. The handful of states with severe problems are close to Pennsylvania. USDA and Rutgers is doing a good job of tracking detections.

Website: StopBMSB.org

Detection in Wisconsin

BMSB was first detected in Wisconsin in 2010 and is slowly being detected throughout the state. It has been detected in Brown, Dane, Kenosha, Rock, Waukesha, Racine. A look alike is western seed conifer plant bug. Adults only have been reported so far and the first reports were from people with a travel history to infested states. In 2012, there was report that some nymphs had been found. Recently reports have been nuisance sightings in houses or manmade structures.

Morphology

Pictures of BMSB can be viewed on hort.uwex.edu (<http://hort.uwex.edu/articles/brown-marmorated-stink-bug>). BMSB adults are 0.5 to 0.75 inches long, mottled gray to brown with alternating bands of white/dark on outer edge abdomen, with dark/light bands on the antenna. The shoulders are smooth. It is important to correctly ID the bug as there are some bugs that look similar, like the western conifer seed bug and box elder bug.

Life Cycle

BMSB adult females can lay up to 350 eggs at a time. In northern China, there is one generation/year, but southern China has 6 generations/year. New Jersey reports 1 generation/year, but West Virginia reports 2 generations/year. Wisconsin does not yet have a real breeding population, but it is expected that there will be 1 generation/year. DATCP is monitoring the situation. Females lay eggs from June to late summer. Eggs are white to pale green, in clusters of about 20 eggs on the underside of leaves. There are up to 5 instars.

Adults overwinter in houses and dead thinning trees. Dogs have been used to sniff them out in the snow in the dead trees. They can be in amazing numbers, virtually buckets of them. They are attracted to these warmer areas for protection. There is no hope of controlling them with winter cold due to their congregation in warm homes and other structures. If you kill them in your house, they stink.

Hosts

BMSB is similar to Japanese beetles in that have a very broad range of host plants. They have been reported in tree fruit crops, vegetables, berries, field crops, even through tree bark of crabapples and maples. They are not picky eaters and will attack in solitary stages and in aggregates.

It is a major pest of apples. BMSB probes the apples and causes catfacing or makes a little blemish on the fruit surface. The blemishes may not be seen when they are put in cold storage, but there is major interior browning

damage to the apple flesh. Damage may not be apparent until the apple is cut open. It may cause premature drop of apples.

Over 300 different plants have been identified as hosts.

Agricultural Impact

The agricultural impact can be huge, both in economic and environmental effects. It was reported that in mid-Atlantic region in 2010 up to 45,000 bushels of apples were affected, resulting in a loss of 37 million dollars. With this kind of damage, pesticide use has increased.

Damage to grapes is also reported, although it is not a preferred host. Of course, once the fruit is injured it is a loss since pathogens can enter. It is also of concern to vintners, since the bugs stink and cause a taint to the taste of the fruit juice and the wine. It is difficult to exclude them in the packing houses or winery buildings since they come in to overwinter and there are reports of them flying around peoples' heads while they sample wine.

With this kind of damage, pesticide use has increased. Apples growers have been good about trying IPM, but the economic losses work at cross purposes. It is estimated that BMSB has set back IPM 4 decades, since there can be up to 20 application of pesticide in a season to control the pest and still there are losses.

Monitoring and Control

Scouting can be done as they are pretty big bugs and there is a probably an edge affect where they are entering fields from the woods. Monitoring traps are available such as a pheromone trap which are better later in the season, although more work needs to be done to determine efficacy. An aggregation pheromone has been identified but is not yet available. A trap called Dead Inn, Sting Bug Trap and Box is available at Ecogreen Warehouse for about \$25, but it may not be very effective. No experience using them since we don't yet have a breeding population in Wisconsin to trap.

There is some research into biological control, but it is not very far along. Parasitic wasps are a possibility and the USDA is doing some research in other states but it takes a long time to introduce a new species. One was identified in China that gives up to 50% control.

Chemical control is possible with pyrethrins and carbamates. Belay, Danitol, Venom, Scorpion, Brigade are some of the insecticides that have been used for control. Most do not have BMSB on the labels although it is possible that the labels have been updated since lots of people are using them

More information on monitoring and control: <http://entomology.ces.ncsu.edu/brown-marmorated-stink-bug-in-north-carolina-3/>

Questions

Please Describe Damage

There are lots of pictures on line. Damage varies between crops. Blemishes on fruit with darker circular spots on apples. Tomato damage may show lighter spots. Damage may not even be apparent until fruit is put into cold storage and apples are opened up. They will show brown fuzzy looking damage, but it is not frass. A major impact has been on apples. Publication shows damage on apples.

Please Describe Timing for Damage-when should controls be started?

BMSB emerges in the spring to feed in May- June. Eggs are laid all summer and the new generation overwinters. Monitoring and Control should begin in spring. Since we don't yet have a breeding population, we don't know all the details. All states are working on this.

Are there any organic options for control? There is concern for native pollinators and colony collapse disorder.

Not yet on organic control, because my info is superficial. The parasitic wasps hold some promise, but it takes a long time to get it into the state. P.J. said there is some information out of Penn State regarding experiments with organic pesticides. Pyrethrins and Spinosad were most effective. He doesn't know how they compare to conventional chemistries. They are being evaluated, but we don't know the efficacy. It is a little depressing since over 300 hosts have been identified; it is a major problem. There is no hope of eradication and even though densities here are not as great, they are sure to increase.

To whom should we report new finds?

You can report to P.J., Christelle, Krista Hamilton at DATCP. There is an agreement that we all will inform each other if we get a find.

Will you be giving an update?

Yes, in about a month. Look on the schedule for the exact date.

<http://hort.uwex.edu/articles/brown-marmorated-stink-bug>

FINAL NOTES

Next week, the host will be Lisa Johnson from Dane county. Bernie Williams will be the guest and the special topic will be crazy worms.

The full audio podcast of today's and archived WHU conferences can be found at <http://fyi.uwex.edu/wihortupdate/>

UW LINKS

Wisconsin Horticulture webpage <http://hort.uwex.edu>

UW Plant Disease Diagnostics webpage <http://labs.russell.wisc.edu/pddc/>

UW Insect Diagnostic Lab <http://www.entomology.wisc.edu/diaglab/>

UW Turfgrass Diagnostic Lab <http://labs.russell.wisc.edu/tdl/>

UW Vegetable Pathology Webpage <http://www.plantpath.wisc.edu/wivegdis/>

UW Vegetable Entomology Webpage <http://www.entomology.wisc.edu/vegento/people/groves.html#>

UW-Extension Weed Science <https://fyi.uwex.edu/weedsci/>

UW-Extension Learning Store <http://learningstore.uwex.edu>

UW Garden Facts <http://labs.russell.wisc.edu/pddc/fact-sheet-listing/>

WHU “OFF THE AIR”

During this past week specialists have commented on these issues off the air:

Announcements

Trisha Wagner: Do all of the extension agents know that there is an international activities program? Please consider taking part in these projects. There is currently a need for volunteers in horticulture for Guatemala. Send

an eMail to Trisha or Paul Ohlrogge if you want more information about the opportunities. Travel can be with a partner such as a UW colleague or other staff specialist.

Vegetable Crop Update

Vegetable Crop Update Newsletter #8 is available at <http://www.plantpath.wisc.edu/wivegdis/>

Topics covered in the issue include:

Welcome to our "new" organic production specialist

General vegetable disease updates

Late blight updates

Blitecast and P-Days for late blight and early blight management

Fungicides for late blight control in WI potatoes, 2014 updated list

PDDC UPDATE

UW-Extension/Madison Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Ann Joy, Joyce Wu, Tom Hinsenkamp, and Catherine Wendt,

Plant Disease Diagnostics Clinic

The PDDC receives samples of many plant and soil samples from around the state. The following diseases/disorders have been identified at the PDDC from May 31, 2014 through June 6, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Rose ('Gruss an Aachen')	Botrytis Blight Cytospora Canker	<i>Botrytis</i> sp. <i>Cytospora</i> sp.	Waukesha Waukesha
NEEDED WOODY ORNAMENTALS			
Fir (White)	Gelatinosporium Canker Phyllosticta Needle Blight	<i>Gelatinosporium</i> sp. <i>Phyllosticta</i> sp.	Dane Dane
Spruce (Black Hills)	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	Lincoln
Spruce (Blue)	Rhizosphaera Needle Cast Spruce Needle Cast	<i>Rhizosphaera kalkhoffii</i> <i>Setomelanomma holmii</i>	Racine Racine

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.