Wisconsin Horticulture Update Summary May 10, 2013

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WI WEATHER REVIEW

Temperatures climbed into the 70s and 80s across the state early in the week ending May 6, 2012, before a cold front brought yet another winter storm system. The northwest part of the state received over a foot of snow in some areas, with heavy rain reported elsewhere.

Across the reporting stations, average temperatures last week were 2° below normal to 6° above normal. Average high temperatures ranged from 58° to 69°, while average low temperatures ranged from 39° to 45°. Precipitation totals ranged from .09" in Milwaukee to 1.53" in Green Bay. (WI Crop Report)

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 39.0 to 156.5. Following is a list of GDD as of May 10, 2013 for the following cities: Bayfield 39.0, Beloit 156.5, Crandon 50.2, Cumberland 55.3, Dubuque 127.6, Eau Claire 64.2, Fond du Lac 82.4, Green Bay 61.0, La Crosse 74.8, Madison 108.1, Milwaukee 84.9, Wausau 57.8. 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. Common lilac first bloom 207; common flowering quince full bloom 208; Sargent crabapple first bloom 213; wafaring tree viburnum first bloom 227; **elm leafminer adult emergence 228**; Koreanspice viburnum full bloom 233; eastern redbud full bloom 254; common horsechestnut first bloom 260; **pine needle scale egg hatch 1st generation 277**; Sargent crab full bloom 282; **eastern spruce aldegid egg hatch 283**; wayfaringtree viburnum full bloom 287; blackhaw viburnum first bloom 301; redosier dogwood first bloom 311; common lilac full bloom 323; **lilac borer adult emergence 324**; Vanhoutte spirea first bloom 329; common horsechestnut full bloom 344; **lesser peach tree borer adult emergence 362**; **oystershell scale egg hatch 363**; blackhaw viburnum full bloom 370 pagoda dogwood first bloom 376; redosier dogwood full bloom 408; Vanhoutte spirea full bloom 429; black locust first bloom 455; pagoda dogwood full bloom 486; common ninebark first bloom 507; **bronze birch borer adult emergence 550**.

INTRODUCTION

The host for today's WHU was Sharon Morrissey. PDDC Director Brian Hudelson, Insect Diagnostician Phil Pellitteri and entomologist Chris Williamson were special guests. Participants in today's discussions were representatives from the following counties: Brown (Vijai Pandian), Burnett/ Sawyer/ Spooner/ Washburn (Kevin Schoessow), Columbia (George Koepp), Milwaukee (Sharon Morrisey), Outagamie (Jill Botvanik), Racine (Patti Nagai), Waukesha (Kristin Krokowski), and Winnebago (Kim Miller).

HORTS' SHORTS

Agents report the following issues to be of interest this week: Spring has arrived in all parts of state, even in areas covered with 15 inches of snow last week. Forsythia, Amelanchier, star magnolia, daffodils, and tulips are blooming in most areas; crabapple buds are developing but not yet open; and lawns are greening up and being mowed. Arborvitae stressed by last year's drought, the long winter and late winter ice storms are struggling. Black knot was identified. The soil temperature in Green Bay was 55°. Spring insects were a concern for homeowners, as reports were received of springtail waking from hibernation, ladybugs in houses, ants inside and out, and bees and wasps drawing attention. Weed and seedling identification and turf care questions were common. In Columbia Co., clients noticed white material on trunks and branches of fruit trees, and green material on trunks and branches of street trees. In Spooner, an unfortunate nursery owner with potted bare-rooted fruit trees discovered all were girdled up to the lower branches by rabbits during last week's snow drifts.

SPECIALIST REPORT: Emerald Ash Borer Update

Presented by Chris Williamson, Professor of Entomology, Extension/ Research Entomology rcwilliamson@wisc.edu

UW-Madison EAB Information Webpage

The UW-Madison Emerald Ash Borer (EAB) Information Page, www.entomology.wisc.edu/emeraldashborer, a

product of collaborative efforts, including those of research technician PJ Liesch, offers specialized EAB information for Wisconsin.

There are two new fact sheets on the webpage. "Is My Ash Tree Worth Treating for Emerald Ash Borer" (XHT1215), written with the help of PJ Liesch and Patti Nagai, is just one of the resource tools that can be downloaded from the webpage. The other fact sheet, "Homeowner Guide to Emerald Ash Borer Insecticide Treatments" (XHT1181), revised December, 2012, details what products are available, when they should be used and how to apply them. Due to product changes in the industry, this fact sheet will require frequent updates. For instance, Scotts, owner of the Ortho® brand, just sent out a notice it acquired Green Light® products. Scotts will incorporate some of the newly-acquired products into their own product line, and so the Green Light® products referred to in XHT1181 will no longer be available under the Green Light® name. In addition to that change, two Ortho® products containing the active ingredient imidacloprid have been discontinued. Scotts will introduce a new version of Tree and Shrub Insect Control with the active ingredient 2% dinotefuran. XHT1181 will be updated as soon as possible with these changes so it is current.

The UW webpage also refers to the process of reporting suspected emerald ash borer samples. The public is first encouraged to talk to their county agents when suspecting EAB. When a physical sample or digital photo is received, it should be sent to Phil Pellitteri. If Phil believes it is EAB, he will forward it to a USDA taxonomist for verification. A toll-free hotline number is also posted to report suspected findings.

Mark Renz and Mike Maddox have received funding and are in the process of developing an Early Detector Program to use trained volunteers, such as Master Gardeners, to help identify EAB. The process will create an opportunity to increase the number of people in the field available to seek, identify and report cases of EAB in our state.

The UW webpage links to other resources, including the main clearinghouse of EAB information: www.emeraldashborer.info Originally based out of Michigan where EAB was first detected, the website contains information from many states and links to their individual websites. The UW-Madison webpage also provides a direct link to the Wisconsin DATCP resource, "Where Has EAB Been Found". Updated frequently, it is a list of all the municipalities in counties where EAB has been confirmed.

EAB Update

In 2012 the state experienced a long drought and high temperatures, stressing many plants. Some plants exhibited immediate signs of the impact, such as turf browning, but trees did not immediately show outward signs of stress. This year, the impact appears to be more visible.

At the UW-Madison EAB research study site at Riveredge Nature Preserve in Newburg (Ozaukee County), 100 trees have been under observation since 2009, the year after EAB was discovered there. Ten treatments were applied to ten trees each. Up until this year, little difference was noted on the trees, but this spring, the changes have been dramatic. Untreated trees have exhibited clear decline: substantial woodpecker damage from crown to bow has occurred, D-shaped exit holes have been exposed, and multitudes of feeding galleries have been found under the bark. Treated trees only 3 feet away, however, look healthy, with little to no woodpecker activity. More evidence will be available after trees leaf out, and in August, the most opportune time to evaluate the trees' response to EAB, another assessment will be made. In an attempt to see how long TREE-age® treatment could be effective, only a single application was made five years ago; currently it appears only three of the ten treated trees are starting to fail. That suggests there may be 70% control five years after an individual treatment. A study by Dave Smitley at OSU has data suggesting TREE-age® provides three to four years protection. When all the Riveredge site data is analyzed, the effectiveness of each of the treatments will be evaluated. The take-home messages from the study thus far are that insecticide treatments do work, and untreated trees will succumb to EAB. On Wednesday, May 22, at 10 AM, Chris will tour the research site with industry personnel and nature staff to see the impact of the study; others are welcome to join the tour.

There are several products that are effective against EAB (refer to XHT1181 for the full listing). The most common are:

- Dinotefuran, the granular version of the product that is available to the homeowner, is effective when applied to the basal area of the tree, where it is absorbed by the roots and translocated by the xylem tissues into the plant. The commercial form of dinotefuran, Safari®, is applied as a basal bark spray from the soil line

to 4 ½ feet off the ground, until runoff occurs.

- Imidacloprid is available to homeowners and is effective when used as a soil drench or soil injection.
- TREE-age® is applied as a trunk injection only by licensed, certified applicators only. The active ingredient, emamectin benzoate, is a large, cumbersome, bulky molecule that cannot be absorbed by roots and translocated, therefore it can only be applied by injection.

Research has revealed, with ash trees in particular, the most root biomass is within the area 20 inches out from the base. Basal soil treatments formulations should be applied within that area. When applying granular products on mulched trees, it is advantageous to pull back the mulch, apply the product, and place the mulch back. If the tree is not mulched, and turf is present up to the trunk, it is permissible to apply the granular product on the turf, but it would be more effective if the area were slightly scarified, then apply the granules. In either case, water thoroughly, according to directions.

Q. *Is there a warning for use around pets or wildlife with the Ortho® granular product?*
A. I have not seen the label yet so I am not sure.

Q. *If EAB infestation starts at the top of the tree and works its way down, what is the mode of action with the Safari® basal bark treatment that is applied from the soil level to four feet up the trunk?*
A. The basal bark treatment penetrates through the bark, enters into the cambial tissue, gets into the xylem and moves up; instead of being root absorbed, it is bark absorbed. In Safari®, Valent U.S.A. uses Pentra-Bark® mixed with dinotefuran to increase the uptake. Safari® is not available as a homeowner use formulation.

Q. *The Bayer Advanced Tree & Shrub Protect & Feed liquid formulations state they treat EAB, but the granular formulation only says it treats borers, not specifically EAB. Aren't they the same ingredient?*
A. They are both imidacloprid, but the reason the granular formulation does not state it controls EAB is because there currently is not enough data to verify it works. They know it works on other boring insects, but they need more data before they can be confident to put EAB on their label. EPA also requires the data before allowing them to add EAB to the label. I, along with other researchers, are currently working on it.

Q. *What are the active ingredients we are talking about in the liquid and granular products? Are they the same ingredients?*
A. All of the Bayer products we are discussing contain imidacloprid; they may be imidacloprid alone or mixed with other ingredients. A newer product, Bayer Advanced 12 Month Tree & Shrub Protect & Feed II, contains imidacloprid, clothianidin and fertilizer. Imidacloprid is known to effectively control EAB and other boring insects; the clothianidin is very effective in controlling *Lepidoptera*, such as gypsy moth. When using the newer product as a basal drench, it is absorbed by the roots, translocated via the xylem, sinks into the leaves and delivers a lethal dose of clothianidin to the gypsy moth caterpillars as they feed. Bayer's studies suggest the low amount of fertilizer added to the product offers some enhancement of the other materials.

None of the Bayer products contain dinotefuron. After Scotts acquired the Green Light® consumer product line containing dinotefuron, they represented that they will use that chemical in their Ortho® products.

Q. There is a new EAB product brought to our attention by the WI DNR, called BRANDT enTree™. It is a way to administer the emamectin benzoate treatment. I believe Milwaukee is considering it. Do you know what it is?
A. No, I have not heard of it.

Is My Ash Tree Worth Treating for Emerald Ash Borer? (UWEX):
http://hort.uwex.edu/sites/default/files/Is_My_Ash_Tree_Worth_Treating_for_Emerald_Ash_Borer.pdf
Homeowner Guide to Emerald Ash borer Insecticide Treatments (UWEX):
http://labs.russell.wisc.edu/eab/files/2012/12/Homeowner-Guide-to-EAB-Insecticide-Treatments.pdf
Scotts: http://www.scotts.com
BayerAdvanced: http://www.bayeradvanced.com
BRANDT enTREE™: http://treecarechicago.com

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.

Rhizosphaera on Black Hills spruce

Rhizosphaera is a common problem on spruce, but this week it was seen on Black Hills spruce, a tree not usually having many problems. The samples submitted were loaded with the fungus, causing a bit of needle loss to the older interior needles.

Rhizosphaera Needle Cast (UWEX):
http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Rhizosphaera_Needle_Cast.pdf

Abiotic problems on greenhouse plants

Greenhouse plant samples have been submitted with conditions where no pathogens were found. Some symptoms of distorted growth were evident, but the newer foliage tended to look healthy. They appeared to have some possible chemical injuries, probably from sprays that were applier earlier and may have interacted with the weather, and/ or possibly with heating system problems.

Introduction to Abiotic disorders in Plants (APSnet):
https://www.apsnet.org/edcenter/intropp/PathogenGroups/Pages/Abiotic.aspx

SPECIALIST REPORT: Insect Diagnostic Lab Update

Presented by Phil Pellitteri, Distinguished Faculty Associate, UW-Madison Department of Entomology and Director, UW-Extension Insect Diagnostic Lab pellitte@entomology.wisc.edu

Ants

Indoor ants have been active for a few months, especially the pavement and carpenter ants. Outdoor ants are becoming more active with the season.

What to do About Household Ants (UMN): http://www1.extension.umn.edu/garden/insects/find/what-to-do-about-household-ants/

Bees

Solitary bees are not typically a problem. They are short term, non-aggressive bees. They are most noticeable on bare soil, and after last year's drought, there is considerably more bare soil this year.

Bee mortality has been in the news lately, especially concerning honeybees. It just was not a good year for honeybees, and that is typical. 30% - 40% of the bees in the state probably did not survive the winter; that is considered normal for a nasty winter. The varroa mite may have contributed to some loss. There is no evidence that it can be attributed completely to collapse disorder or neonictinoid insecticides; it is more complicated than that.

Bumblebees and Solitary Bees & Wasps in Urban Landscapes (OSU): http://ohioline.osu.edu/hyg-fact/2000/pdf/2143.pdf

USDA Report on the National Shareholders Conference on Honey Bee Health
http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf

Tent Caterpillars

Tent caterpillars are less evident than expected this year, considering plant development at this time. If they will come out, it would be expected they do so in the next week or so. This year everything seems three weeks behind the norm, where last year it was three weeks ahead.

Eastern Tent Caterpillars (UWEX): http://learningstore.uwex.edu/assets/pdfs/A2933.pdf
Webworms (UWEX): http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Webworms.pdf

Flea Beetles

In Phil's garden, Coreopsis have been torn apart by a little black and cream striped Coreopsis beetle. There were about 50 beetles on each plant, suggesting that beetles in the *Chrysomelid* family that overwinter as adults may have had a good winter, perhaps because of the good snow cover, and will have a strong presence this spring. The family includes flea beetles and leaf beetles that feed on various plants. If they come out, in the next week to ten days, they may start feeding on some emerging perennials or transplants being put out.

Q. *I have been having a terrible problem with flea beetles at the Fox 6 garden in Milwaukee in the past, and this year the kale, mustard and radishes had barely broken the surface when they were devastated by flea beetles. I replanted and covered with row cover, but the beetles were already there. Should I just spray them with neem every 3-4 days?*
A. Spinosads may provide better results than neem, offering longer residuals. Neem is more of an antifeedant; spinosads may knock them back. Spinosads have a broad label so they can be used on many crops and various insect pests. There is no need to alternate between neem and spinosad because there is no resistance issue.

Flea Beetles (UWEX): http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Flea_Beetles.pdf
Flea Beetles in Home Gardens (UMN): http://www1.extension.umn.edu/garden/insects/find/flea-beetles/

Ant control

Q. *What is the control for ants on the pavement*?
A. With any ant problem, if the nest is found and the ants are killed, the problem is solved. When pavement is involved, the problems are finding the nest and getting product deep enough into it. Ants may be bubbling out of an expansion joint in the concrete but the nest might be five feet to the right, in which case it might not be solvable. In most cases, using a screwdriver or a crowbar to make a tunnel to the nest and pouring a liquid insecticide in will deliver the product to the queen. Dusts and granules are not as effective as liquids because they just sit where they are put, whereas the liquids soak into the ground.

Baiting ants outside is difficult. For indoor ants, commercial baits are available, but determining their preference for either sweet things with a sugar base, or protein and fat, is necessary to choose the proper bait. The consumer product line is reasonable, but the more effective ant baits are commercial ones that are not restricted to professional use; they are available on the internet. There are fifteen species of ants. Identifying the ant reveals what food base it prefers and what the likely nesting source is; some ants are always outdoors, some are more typically inside and some are both.

Pavement Ants (UWEX): http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Pavement_Ants.pdf

Crystal ball predictions for 2013

Variegated cutworm update

Q. *What is the status of the variegated cutworm*?
A. There has been very little airflow from the south this year to get the type of insect dumping as seen last year. Then, the variegated cutworm may have been blown on strong winds from Oklahoma; adults were found in Wisconsin as early as mid-March. The size of those populations last year surpassed anything in at least 35 years, possibly longer. Although there are usually a few every year, there is nothing to suggest they will be a problem this year.

Variegated Cutworm (NDSU):
http://www.ag.ndsu.nodak.edu/aginfo/entomology/entupdates/Lawn_Ornmntl/variegated_ctwrm.htm

Japanese beetle update

Q. *What do you predict for Japanese beetle problems in Green Bay this year?*
A. It may be somewhat complicated. In regards to Green Bay, where Japanese beetle were only a recent find, the problem will probably get worse before it gets better; in areas where they had been an issue for a few years, the problem may settle down. Regarding emergence time, since this year everything is coming out later, the expectation is the adults may start flying around July 1. Another consideration is that because last year was so dry overall statewide, and dry lawns are not suitable for breeding, the populations may be lighter than normal.

Japanese Beetles (UWEX): http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Japanese_Beetle.pdf
Japanese Beetles (UWEX): http://learningstore.uwex.edu/Assets/pdfs/A3737-E.pdf

Mosquitoes

Q. *Earlier in the week you mentioned that if it remains wet outside, the mosquito population could be high. What does the crystal ball say about mosquitoes this year?*
A. Mosquitoes flourish when there is standing water for more than ten days, especially flooding water, not permanent pools. There are eggs that have been waiting for such conditions for a few years, so floods will bring out a big flush of adults. In summer, with high temperatures, the explosion could occur in just two weeks of a heavy rain, but since it has been so cool, the emergence is being strung out. Typically mosquitoes break out around Memorial Day; this year it may be a few days later. With them blowing in from one to fifteen miles away, it could be an intense spike and it may take three to four weeks to settle down. June may be itchy. It won't be the worst ever, but people may feel so since last year was a light mosquito year.

Integrated Mosquito Management (UW-Madison): http://labs.russell.wisc.edu/mosquitosite/?q=mosquitosite/index.html

General Questions

Homeowner insecticide lists

Q. *Are there any plans to update the product listing guide on which you have worked so effectively in the past with Master Gardener volunteers, which lists organic and synthetic products commonly found on our store shelves for questions we commonly get? One of our volunteers put in many hours in a detailed list.*
A. We sent out a request for volunteers a few years ago, but had so few responses we gave up. We would like representation from around the state so the list is applicable to everyone, and would compile the data if groups were interested. Your local information should be a great resource for your area.

ANNOUNCEMENTS

Responding to Horticultural Inquiries

The program in southeast Wisconsin on May 8 was fantastic. Thanks to Brian, Phil, Mark and Brendon for organizing the program and presenting the interesting topics.

The handouts and presentation materials from the May 8 program are available online and most are downloadable as pdf files. Phil's presentation is available as a web-only viewable piece.

The 2013 Responding to Horticulture Inquiries will feature update sessions with Brian Hudelson, Phil Pellitteri and Mark Renz, an "Answering Horticultural Inquiries in County Offices" session, and a hands-on plant ID, insect ID, and disease ID session. These will be open to plant health advisors and county office staff. Program schedule: http://fyi.uwex.edu/wihortupdate/2013/04/15/responding-to-horticulture-inquiries-2013/

There are many available spots for the upcoming programs.

The program will be offered the following locations:

- **Iowa County** May 23, 2013 9 AM – 5 PM, Iowa County UW-Extension, 303 W. Chapel, Dodgeville, WI 53533
- **Marathon County** May 30, 2013 9 AM – 5 PM, Marathon County UW-Extension, 212 River Dr., Wausau, WI 54403

Please contact Brian Hudelson (608-262-2863 or bdh@plantpath.wisc.edu) by May 1, 2013 to reserve a spot or if there are questions.

FINAL NOTES

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 Science http://turf.wisc.edu/
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 http://turf.wisc.edu/
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:

Vegetable Crop Update

Update #4 is available to view at http://www.plantpath.wisc.edu/wivegdis/
Topics in the newsletter include:

- Vegetable Crop Updates
- Early season vegetable damping off
- Hop downy mildew
- Starane 24c Special Local Needs label approved in WI

PDDC Update

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

Brian Hudelson, Ann Joy, and Andrew Pape, 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 April 20, 2013 through April 26, 2013.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Boxwood	Volutella Blight	*Volutella* sp.	Walworth
NEEDLED WOODY ORNAMENTALS			
Spruce (Black Hills)	Rhizosphaera Needle Cast	*Rhizosphaera kalkhoffii*	Sauk, Houston (MN)
Spruce (Norway)	Rhizosphaera Needle Cast	*Rhizosphaera kalkhoffii*	Waukesha
VEGETABLES			
Tomato	Edema	None	Marathon

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