

Wisconsin Horticulture Update Summary, July 25, 2014

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WI WEATHER REVIEW

Sweltering heat replaced last week’s abnormally cool weather. Temperatures in the upper 80s to near 90°F on July 21 combined with excessive humidity to push heat index values to 100°F, and prompted an advisory to be issued for the northwest and west-central areas. A complex of strong to severe thunderstorms provided rain and some relief to the north and southeast, but much of the state remained dry. Showers and storms exited the southeast on Tuesday and cooler, less humid conditions returned for the rest of the week. The brief temperature turnaround promoted rapid development of summer crops, especially corn and soybeans. More than 22% of the state’s corn is silking and 10% of the soybean crop is setting pods. Despite the early-week heat, the season is still an average of four days behind last year and nine days behind the 30-year average. The degree day accumulation at Madison was 1,434 on July 23 (modified base 50°F), which compares to 1,499 degree days on the same date last summer and a normal accumulation of 1,567 degree days. (Wisconsin Pest Bulletin, Vol. 59, No. 12, July 24, 2014)

Growing Degree Days (GDD)

Growing degree days is an accumulation of maximum and minimum temperatures as directly related to insect and plant development. As of July 23, in Wisconsin, the GDDmod 50 ranged from 824 to 1548: Appleton-1213; Bayfield-824; Beloit-1548; Big Flats-1328; Crandon-983; Crivitz-1063; Cumberland-1153; Eau Claire-1334; Green Bay-1119; Hancock-1328; Hartford-1222; Juneau-1312; LaCrosse-1498; Lone Rock-1508; Madison-1434; Medford-1083; Milwaukee-1169; Port Edwards-1285; Racine-1171; Sullivan-1222; Waukesha-1222; Wausau-1121 (WI Pest Bulletin Volume 59 Number 12 July 24, 2014). To determine the Degree Days of any city in Wisconsin, use the Degree Day calculator at

http://agwx.soils.wisc.edu/uwex_agwx/thermal_models/many_degree_days_for_date

The following phenological information gives a perspective on how GDD accumulation relates to some plant and insect development (<http://bygl.osu.edu> and <http://www.entomology.umn.edu/cues/Web/049DegreeDays.pdf>): mountain laurel, full bloom, 822; dogwood borer, adult emergence, 830; oakleaf hydrangea, first bloom, 835; cottony maple scale, egg hatch, 851; panicle hydrangea, first bloom, 856; fall webworm, egg hatch (first generation), 867; mimosa webworm, egg hatch (first generation), 874; fuzzy deutzia, full bloom, 884; winged euonymus scale, egg hatch, 892; spruce budscale, egg hatch, 894; winterberry holly, full bloom, 897; squash vine borer adult emergence, 900; paniced goldenraintree, first bloom, 924; June bride littleleaf linden, first bloom, 953; azalea bark scale, egg hatch, 957; Japanese beetle, adult emergence, 970; rosebay rhododendron, first bloom, 1,010; June bride littleleaf linden, full bloom, 1,115; bottlebrush buckeye, first bloom, 1,158; Ural falsespirea, first bloom, 1,170; paniced goldenraintree, first bloom, 1251; Rose-of-Sharon first bloom, 1347; pine needle scale egg hatch-2nd generation, 1349; euonymus scale-2nd egg hatch, 1923; magnolia scale-egg hatch, 1934; banded ash clearwing borer-adult emergence, 2195.

INTRODUCTION

Today’s WHU host was Rock County horticulture educator Christy Marsden. Specialists were PDDC director Brian Hudelson and IDL interim director P.J. Leisch. The special guest this week was Dr. Amanda Gevens, Vegetable Specialist in the UW Dept. of Plant Pathology. Kristy from Walworth County wanted to thank all the other educators and MGVs who answered questions in her absence. Other discussion participants were representatives of the following counties: Brown (Vijai); Douglas(Jane); Kenosha (Barb); Marquette (Lyssa); Milwaukee (Sharon); Racine (Patti); Pierce (Diana); Walworth (Kristy); St. Croix (Heidi); Waukesha (Kristin); Winnebago (Kimberly); Washburn/Sawyer/Burnett (Kevin).

HORTS' SHORTS

This week, county agents reported a mixed bag of issues.

Brown County: It has been dry and lawns are going dormant. We are getting questions on tree dieback due to winter damage, poison ivy control, septoria leaf spot and early blight on tomatoes. Japanese beetle numbers are lower this year.

Rock County: The landscape is drying out even though soil moisture is still adequate and we haven't had as much rain as others lately. Late blight is suspected on a sample, but we need confirmation. A sure sign of summer is the cherry tomatoes ripening, but we are still waiting for full size tomatoes. We are seeing lots of fungi. It has been a little quiet, so people may be doing other things.

Marquette County: Lots of horticulture questions. Issues we saw this week were grape leaf phylloxera, soil testing questions, rhubarb not thriving, wild buckwheat ID, raspberry spur blight, wooly aphids and lady bug larvae on apple trees. Someone was looking for information on starting up a small fruit/berry business so we would appreciate suggestions from everyone.

Milwaukee County: We have 30 MGVs here doing a training at Boerner Botanical Gardens and we are listening to the update from there. Patti Nagai, P.J. Leisch, Barb Larson, and Kristin Krokowski are here and will give their reports. For Milwaukee County, Japanese beetle numbers are very low this year, with only one place reporting a good size population. We had two days of hot, humid weather, but mostly it has been very cool with 49^o C one night. We still have female flowers on cucumbers, but not males and we are expecting fruit to abort. Plum curculio was rampant on the plums. Some powdery mildew, but lack of humidity has been keeping that down

Kenosha County: Lack of moisture has caused some turf problems, possibly necrotic ring spot or summer patch, although it is hard to diagnose from a picture. We are giving information on cultural care.

Racine County: We have seen leaf spots on fruit trees, some Japanese beetles but mostly low populations here, grape phylloxera, leaf galls, and long lasting winter injury on Alberta spruce and Japanese yew.

Waukesha County: Not too much going on, but we also have lower Japanese beetle populations except from a fellow in Ottawa. Early blight on tomatoes is ubiquitous. We have been getting regular rain.

Douglas County: Cucumbers, tomatoes, and peppers are starting to flower and set fruit, even though it has been cooler at night which might impact yield. The mix of rain and sun has been perfect. Not many insect problems yet.

Walworth County: Gypsy moths on all the trees around the government center. The females are laying eggs then dying, but the birds are eating the moths. Some vegetable diseases are showing up.

St. Croix County: It has been very quiet. We had one earwig ID. We had a question on tree dieback on an Autumn Blaze maple sample which we will send to the PDCC for diagnosis. Other issues were blossom end rot on tomatoes and various diseases on raspberries. We got some needed rain.

Pierce County: Spotted Wing Drosophila is showing up in raspberries. There has been adequate moisture, with no flooding or drought. We are seeing fungal diseases. Vegetables are getting harvested, and problems with apple trees are continuing.

Winnebago County: We have had questions on weed/tree ID. It has been dry, although there have been a few sprinkles. We are still getting questions on tree dieback.

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

Japanese beetles are down statewide, except for a few isolated spots. Chris Williamson and his students report fewer caught in traps.

July is a good month for moth flights and we will be conducting a survey. Spotted wing drosophila has been popping up in the state and we have had bed bug questions trickling in.

Milkweed Longhorn Beetles

Milkweed longhorn beetles are red, with black spots. They are fairly common.

<http://www4.uwm.edu/fieldstation/naturalhistory/bugoftheweek/red-milkweed-beetle.cfm>

Stag Beetles

Stag beetles are large, about 1.5 inches long, reddish brown beetles with large mandibles. They are associated with rotting trees, but adults are attracted to lights and they have been clinging to window screens.

http://www.entomology.wisc.edu/diaglab/02hilite/7_8.html

Bat Bugs

These look very similar to bed bugs but can be differentiated by hairs, which can be seen under the microscope. They parasitize bats and normally there are about 3 cases a year, but we had 3 cases in the last couple of weeks.

<http://ohioline.osu.edu/hyg-fact/2000/2105a.html>

Questions/Comments for P.J. Leisch

What is the aphid activity like this year? I (Brian) will be reporting on aphid transmitted cucumber mosaic virus on an ornamental. Also there is copious honeydew on my car windshield, which is parked under a maple tree.

There aren't too many cases this year. We heard mention of the wooly apple aphid by Alyssa, and we heard of some on cup plant in a prairie setting.

Any idea why the Japanese beetle populations are lower this year?

It is possible that the drought of 2012 caused lower egg laying because the beetles migrated to irrigated lawns to lay eggs so there might have been a reduction in egg laying area due to dormant lawns. I don't know if the 2013 populations were higher or lower. Another reason might be the very deep frost last winter which might have played a role.

Is there a rebound on butterfly /moth caterpillar populations? We seem to be seeing more of these in Spooner.
I haven't had too many cases of butterflies. I did get a picture from Barron county of hundreds on flowers, although I don't know remember the species in that case. The wet spring was conducive to natural diseases like bacterial and fungal pathogens which may decrease populations. It will depend on the location.

We aren't hearing too much about leafhoppers this year. Are those populations down?

I haven't heard too much about leafhoppers either.

What are the natural, chemical and cultural controls for whiteflies?

We may have a fact sheet on whiteflies, but I might have to do some digging on controls. There are some systemic chemical controls, and insecticidal soap or light oil can provide control on smaller plants if you get good coverage.

Is there a new species of tick in the state?

I would have to see the particular report, but this may be referring to the Lone Star tick, which we have been picking up for a while. Susan Paskewitz, our medical entomology specialist, had several cases last year, so it might be established here now. We have had three or four cases so far this year. (Comment: Madison newspaper had an article on July 22 on Lone Star tick)

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 updates for July 12-18 are attached to the end of this summary.

It has been banner week for vascular wilts on woody plants, and we hit the triple crown. We diagnosed Verticillium Wilt on Japanese maple and ash, Dutch Elm Disease on American and Camperdown elm, and Oak Wilt on an unspecified oak. We saw powdery mildew on cherries and another sample of downy mildew on grapes. We saw cucumber mosaic virus, this time on coneflower. Septoria leaf spot on tomato was also identified.

Cercospora Leaf Spot on Beet and Chard

The symptoms of this fungal disease on this host are circular lesions, tannish in the center with dark, reddish borders.

Black Rot on Cabbage

This bacterial disease has been active on crucifers this year. It has angular, water-soaked necrotic areas with a yellow halo.

Stemphylium Leaf Disease on Onion

This is a common leaf disease, which sometimes comes in as a secondary infection if something else causes rot.

Fusarium on Onion and Garlic

This fungus causes a corky, dry rot of the basal plate.

Questions/Comments for Brian Hudelson

Is there a new strain of Dutch Elm Disease?

There have been two species on the books. One is *Ophiostoma ulmi*, and the other is *Ophiostoma nova-ulmi*, which is supposed to be a slightly more aggressive species.

Was the Oak Wilt sample from us (Kevin)?

No, I think it came from Rock County. There is a fair amount of armillaria in your area of the state that causes oak decline. Declining trees with armillaria will have white mycelial fans under the bark, with black rootlike rhizomorphs growing off the mycelium going down into the soil, as well as fruiting bodies of honey mushrooms. Armillaria tends to be opportunistic and affects stressed trees.

*Is Downy Mildew on *impatiens* prevalent this year?*

That would be a first for me, so please send it in. I am monitoring it, but there is someone at Cornell in New York who is also tracking that disease and looking at the different variants.

SPECIAL TOPIC: Vegetable Disease Update

Presented by Dr. Amanda Gevens, Dept. of Plant Pathology

Dr. Gevens gave a vegetable disease update.

Downy Mildew on Onions

We don't have a lot of commercial onion production in the state, but this disease is now being seen in Michigan. This disease can be aggressive. Cooler, wetter weather are the right conditions for infection. The early symptoms are a grayish purple, fuzzy growth on the onion leaves. Within a day or two, the lesions turn necrotic and look like yellowish or brown sunken areas. Leaf death happens quickly, occurring about five days after infection. This may

be entering the state on air currents from southern and eastern neighboring states as we tend to get it a bit later once we hear reports of it in those states.

In our state, onions are looking pretty good right now on the smaller farms I visited, with few foliar bacterial or fungal diseases.

Powdery Mildew on Cucurbits

This disease seems to be ramping up now in southern Wisconsin, with some plants exhibiting the white talcum-like growth on every leaf. Most people can already identify this, so we don't usually get samples. We see this every year, but direct marketers and commercial growers have to watch out for poorer fruit quality and stems, especially on winter storage squashes. There are some good organic and conventional fungicide management options which I will be happy to give if you contact me.

Downy Mildew on Cucurbits

We have had no actual cases of this disease yet, but some scares for commercial pickle growers. Be on the watch for it since it has been reported in Michigan.

Angular Leaf Spot on Cucurbits

The near misses of downy mildew on cucumbers have actually been a bacterial infection called Angular Leaf Spot. As the name implies the symptoms are angular, squared off yellowish water-soaked lesions on the leaves. When the leaves are newly infected, the lesions are wet and water soaked with the rest of the leaf remaining green. As the infection ages, the lesions turn dry and ragged and fall out looking more like insect feeding injury. The fresher infections can mimic the downy mildew disease. Sometimes we can sometimes diagnose the disease from a photo, but more often we will need a sample to incubate for sporulation to verify that it is or isn't downy mildew. Right now, infections are spotty throughout the state, driven by local environmental conditions.

Septoria and Early Blight on Tomato

These diseases are rampant throughout the state, although Septoria has been more common in some areas and early blight in others. Septoria has killed several plants in my own garden. Early blight is common in tomato and will move up the leaves from the lower canopy and affect productivity. There are some fungicides that are effective for more susceptible varieties if the home gardener or small farmer is looking to treat the fungal infection.

Bacterial Spot on Tomato

Larger bacterial spot lesions look similar to Septoria lesions when that fungus is small. The symptoms are spots with a blackish or very dark margin, brown to black center with yellow haloing, whereas Septoria has a pale tan or brown center with yellow haloing.

Late Blight on Potato or Tomato

This fungal disease has been discovered in just one area in the state so far: a potato field in Portage County. We don't know where it came from since it is strain US-8. This is unique since every late blight occurrence so far this year in the country has been US-23. We did see US-8 in this area last year, but it does not appear to be seedborne, or from potato volunteers. It may have hung over in plant debris in the field. Potato fields should be scouted for this disease at least twice a week although scouting may be more frequent in the home garden for tomatoes. The symptoms are very dark brown, water-soaked lesions on leaves or stems, and they usually start on top as that is where the spores land. As the lesions age, they progress to quarter-size and can look like a darker green leathery dry lesion. If the disease is detected, please submit a sample to me or Brian so we can confirm the disease and determine the strain. The fungicide treatment depends on the strain. Ridomil is effective on US-23, but not on US-8. For that latter strain, a stronger fungicide must be used. For producers, the first phase of management is to destroy the plants to eliminate the source of inoculant. In the confirmed case on July 18, all the plants were killed for this reason. The second phase of the management strategy is fungicide application because it doesn't make sense to lose all production. Some varieties such as Mountain Magic, Plum Regal and Iron Lady have high tolerance to late blight, but for susceptible varieties fungicide application can be effective. For home gardeners, a more organic option is the copper containing products such as Bonide or Dragon Dust. Copper is a critical ingredient in the organic product. Make sure it is labelled for vegetables and reapply every seven days. Stronger conventional fungicides such as chlorothalonil are available for the home gardener. We do have a fact sheet with the options listed.

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

Questions/Comments for Amanda Gevens

For the home gardener, do you suggest just taking late blight infected leaves or to remove the entire plant?

Removing the infected leaves can help, but the best approach is just to remove the entire plant to limit inoculant as there may be spores elsewhere on the plant. If someone has it, we do like to confirm that infection by testing a sample. If it is early blight or septoria, there is no need to remove and destroy the plant.

What do you mean by plant destruction; when should gardeners begin treating their tomato plants?

For the smaller scale home gardener, unaffected fruit can be harvested and ripened on a windowsill. Remove the rest of the plant, bag it up in a black plastic bag and leave it in the sun for a few days. This process will kill the plant, and the pathogen dies when the plant does. For a greater number of plants, you can put it in a burn pile or barrel and burn it. In larger commercial settings, cutting the plants off at the ground and applying an herbicide to the stem is an effective way to kill the plants. If significant late blight is identified in an area, fungicide can be applied preventatively but I don't like to recommend it on a wholesale scale. With any conventional chemical treatments, it is prudent to have some level of understanding of the product and be sensitive to what impact there can be as human safety is involved. It is an option if gardeners are willing to pay for the treatment and educate themselves in its use.

Could you elaborate on plant destruction? Can shallow tillage for the fresh market gardener and burial be used by home gardeners?

Shallow tillage, no more than 6 inches, can be used. At this time in the summer, there is still time for complete decomposition. If it is deeper, especially later in the season, you might be protecting the pathogen and allowing it to remain viable. With shallow tillage, it will break down faster. Do not compost the infected potato or tomato plants, as you cannot guarantee that the temperature is high enough to kill the pathogen, especially if the pile isn't routinely turned. That can be a source of inoculant for the next year if the plant does not completely die or decompose.

This is a fertility question. We have a grower dealing with blossom end rot. Last year he used foliar calcium nitrate, but this year he decided to put calcium carbonate through his drip irrigation. He is starting to see some symptoms such as yellowing and lizard skin on the fruits, which may be because of higher pH spikes around the plant root zone. Does anyone have any experience with this calcium carbonate treatment? I have asked the grower to come up with the amount he is applying and to send some pictures.

I don't have experience with that particular formulation, but you should check to see how often he is regularly irrigating. The problem is not usually a calcium deficiency in the soil, but inconsistent water moving the calcium to the blossom end of the fruit. I have heard of other growers using calcium carbonate through drip irrigation without ill effects, but I don't know how much. The symptoms you describe certainly may be an overapplication of fertilizer or a phytotoxic effect. Send the picture to Matt Ruark in the Soil Science department, who can help diagnose the nutrient problem.

ANNOUNCEMENTS

Winnebago/Brown/Outagamie Counties will be hosting a tree ID workshop in September. There is more information on our websites.

FINAL NOTES

The next meeting is August 1. Jane in Douglas County will be hosting and the special topic will be indoor lighting options.

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:

VEGETABLE CROP UPDATE

Vegetable Crop Update Newsletter #15 is available at <http://www.plantpath.wisc.edu/wivegdis/>

Topics covered in the issue #15 include:

Late blight updates

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

Cucurbit downy mildew update

Onion downy mildew in MI

Plant Disease Diagnostic Clinic updates

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 July 19, 2014 through July 25, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Ash (Unspecified)	Sphaeropsis Canker Verticillium Wilt	<i>Sphaeropsis</i> sp. <i>Verticillium</i> sp.	Dane Wood
Birch	Chlorosis	None	Dane
Crabapple	Sphaeropsis Canker Winter Injury	<i>Sphaeropsis</i> sp. None	Dane Dane
Elm (American)	Dutch Elm Disease	<i>Ophiostoma ulmi</i>	Dane
Elm (Camperdown)	Dutch Elm Disease	<i>Ophiostoma ulmi</i>	Waukesha
Elm (Unspecified)	Dutch Elm Disease	<i>Ophiostoma ulmi</i>	Dane

Maple (Japanese)	Verticillium Wilt	<i>Verticillium</i> sp.	Dane
Maple (Unspecified)	Cytospora Canker	<i>Cytospora</i> sp.	Dane
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Dane
	White Rot	<i>Coprinopsis</i> sp.	Dane
Oak (Unidentified)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Rock
Witch-Hazel	Chlorosis	None	Dane
FRUIT CROPS			
Apple	Root Rot	<i>Pythium</i> sp.	Door
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Jackson, Marinette
	Winter Injury	None	Door, Jackson,
Cherry	Powdery Mildew	<i>Oidium</i> sp.	Dane
Cranberry	Protoventuria Early Leaf Spot	<i>Protoventuria</i> sp.	Wood
Grape	Downy Mildew	<i>Plasmopara viticola</i>	Dane
HERBACEOUS ORNAMENTALS			
Coneflower	Cucumber Mosaic	Cucumber mosaic virus	Dakota (MN)
VEGETABLES			
Beet	Cercospora Leaf Spot	<i>Cercospora beticola</i>	Fond du Lac
Cabbage	Black Rot	<i>Xanthomonas campestris</i>	Outagamie
Garlic	Fusarium Basal Plate Rot	<i>Fusarium oxysporum</i>	Jackson
Onion	Fusarium Basal Plate Rot	<i>Fusarium oxysporum</i>	Jackson
	Stemphylium Leaf Blight	<i>Stemphylium</i> sp.	Green Lake
Tomato	Septoria Leaf Spot	<i>Septoria lycopersici</i>	Dane

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