

Wisconsin Horticulture Update Summary, August 15, 2014

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WI WEATHER REVIEW

Dry weather persisted as crops continued through the latter stages of reproduction. Weekly rainfall totaled less than 0.25 inch across most of the state, although there were reports of heavy rain in excess of two inches in the northeast and east-central counties on August 11-12. A high unofficial total of 5.5 inches was recorded at Maplewood in Door County, according to the National Weather Service Green Bay Office. Growing conditions for Wisconsin crops remained mostly favorable, despite lingering short-term dryness. Reproductive to filling soybeans continued to advance under below-normal temperatures and a lack of heat stress, and 65% of the crop was setting pods at the start of the week, a 20% increase over last week and nine points ahead of the five-year average. Condition ratings for corn declined by three percentage points, but 69% of the crop is in the good to excellent category, 10 percentage points better than the same time last year. (Wisconsin Pest Bulletin, Vol. 59, No. 15, Aug 14, 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 August 13, in Wisconsin, the GDDmod 50 ranged from 1104 to 1963: Appleton-1577; Bayfield-1104; Beloit-1963; Big Flats-1687; Crandon-1268; Crivitz-1393; Cumberland-1514; Eau Claire-1732; Green Bay-1471; Hancock-1687; Hartford-1569; Juneau-1677; La Crosse-1909; Lone Rock-1917; Madison-1821; Medford-1384; Milwaukee-1519; Port Edwards-1635; Racine-1528; Sullivan-1569; Waukesha-1569; Wausau-1440 (WI Pest Bulletin Volume 59 Number 15 August 14, 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>): 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 false-spirea, first bloom, 1,170; panicked goldenrain tree, 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 Racine County horticulture educator Patti Nagai, substituting for Joy Schelbel. The specialists were Insect Diagnostic Lab Interim Director P.J. Leisch and PDDC director Brian Hudelson. The special guest this week was Brian Hudelson of the Plant Pathology Diagnostic Clinic. Other discussion participants were representatives of the following counties: Milwaukee (Sharon); Pierce (Diana); Portage (Walt); Kevin (Sawyer/Burnett/Washburn); Christy (Rock); Christine (Walworth).

HORTS' SHORTS

County agents reported similar issues across the state.

Milwaukee County: We have had adequate moisture and enough so that we haven't had to water. Powdery mildew is just starting in cucurbits and one report of no powdery mildew on phlox for a change. Low productivity and late ripening of tomatoes are complaints. Late blight US-23 race has been confirmed in our county, but none in homeowner gardens that we have heard about. Japanese beetles and other beetles are here, but populations are low. No early fall coloration on trees although I am expecting it. It has been a good recovery season.

Racine: We have had all the tomato leaf diseases and we are expecting a diagnosis of late blight from Racine and Union Grove (Brian confirmed that the Union Grove sample was positive and it was being typed for race in Amanda Gevens' lab). The MGV in charge of the Garden for Giving lost all of the tomato plants to late blight last year so she has a lot of experience with it and has bagged up the plants. Season has been cool and we have had some indicators of an early fall such as cranes staging for flight and dogs shedding.

Portage County: We have been very busy with Farm Tech Days. We had almost 5 inches of rain in the last two weeks but it is already drying out because we have such sandy soil. We have had reports of blueberries leafing out then collapsing due to winter injury and virus problems. Blossom end rot and delayed ripening of tomatoes is common. I saw a monarch butterfly on oregano. Maples are dropping leaves as a residual effect of the winter stress injury.

Rock County: We had just a little rain, so we have been getting some drought complaints and there has been some wilting of trees due to lack of water. We have had some oak and maple questions and EAB questions. We have had amazing fall weather. A few monarchs have been spotted.

Walworth County: We have had some rain. Questions have been mostly about tomatoes not ripening due to cool weather. I did make a posting about apples on Plant Doc. We are getting questions about oak wilt and early senescence, although the oaks still do look healthy.

Pierce County: We have had good rain, although it has been very spotty. We are seeing fungi on aster and peonies and some tree issues. We are also seeing ash leaf drop due to plant bugs; lacewings have been spotted and there have been a lot of bumblebees. Tomatoes aren't ripening and there is some blossom end rot, but it has been a decent growing season.

Washburn/Burnett/Sawyer Counties (Spooner Ag Station): Adequate moisture so fungal and leaf diseases are prevalent and apple trees continue to show winter decline. Our gardens are looking really great and butterflies, moths, and hornworms are populous. It has been a busy summer, but no major problems or outbreaks.

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

P.J. Liesch reported that summer is winding down because he is not getting too many different submissions, mostly more of the same things he has already seen. However, lacewings and aphids are popping up, and there are now more questions about wasps and yellow jackets. There are still questions about oak galls. Spotted Wing Drosophila was reported in Vernon County; blackberry samples were loaded with larvae which are now being grown to adulthood to confirm the presence of SWD.

Horn Worms and Sphinx Moths

Horn worms are the larvae of sphinx moths.
<http://www.ext.colostate.edu/pubs/insect/05517.html>

Hummingbird Clearwing Moths

http://www.fs.fed.us/wildflowers/pollinators/pollinator-of-the-month/hummingbird_moth.shtml

Wasps and Yellow jackets

These insects tend to build up later in the year.
<http://labs.russell.wisc.edu/insectid/files/2014/03/WaspandBeeControl.pdf>

Questions/Comments for P.J. Liesch

From Patti: My tomatoes are infested with swarms of whiteflies and I see no signs of predators. The plants still look healthy. Last year whiteflies were only on one containerized tomato plant. Any idea what the deal is and how they proliferate? Is it just me? I dump my containers after the season in the compost pile and I haven't noticed them back there; it is pretty far away from the plantings.

It is just you; I haven't had many cases of whiteflies from the Racine area. Maybe the environmental conditions aren't conducive to predator development and the whiteflies are able to reproduce more easily. I don't know if they overwinter in soil or leaf litter, but they might.

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 for August 9 through August 14 is attached to the end of this summary.

It has been busy week in the clinic again for vascular wilts on woody plants, and we diagnosed oak wilt on red, bur, and black oak. We also had an oak sample that displayed symptoms consistent with herbicide injury. We saw downy mildew on basil, impatiens, and onion. Late blight was confirmed on tomato from Racine County.

Lilac Witch's Broom

We received a lilac sample that had witch's brooming and we attributed it to a variant of the phytoplasma that causes ash yellows. The homeowner did not want us to do the test.

White Mold on Zinnia, Gaillardia, and Salvia

The symptoms of this disease are collapsing tissue with fuzzy white growth which then forms hard black sclerotia that look like mouse or rat droppings on the plant and sometimes in the stem. It has been confirmed on the gaillardia and salvia, but we are still waiting for confirmation on the zinnia as we have not yet seen the sclerotia in culture or on the plant.

Phytophthora on Pumpkin

The symptoms are similar to the squash submitted last week.

Tomato Yellow Top

We had a tomato that was submitted that was bright red on the bottom, but yellow on top. This condition is caused by too much light, almost like sunscald, due to loss of foliage. The tomato gets very tough on top. The lower red portion is still edible.

Questions/Comments for Brian Hudelson

How does tomato yellow top differ from sunscald on tomatoes?

With sunscald, there is often deterioration of the tissue. The tissue looks more bleached and sunken. With yellow top, the tomato looks fine and you might even mistake for a multi-colored cultivar.

If you cut into the tissue, does it look normal? Does it go through some physiological changes?

Yes, the tissue looks normal, but it is very tough. It does go through some changes.

Is there something called grey wall or ghosting which occurs with cold temperatures when tomatoes are ripening? We tried to look it up at our plant health update.

There is a physiological abiotic disorder like that, but I don't remember the details of the symptoms and whether it occurs with cold or hot temperatures. I will research it for you and get back to you.

We should start thinking about how this cool weather is affecting our vegetables, even the soil temperatures. We are hearing about poor fruit set and blossom blast and blossom end rot on tomatoes, peppers, and cucumbers and even poor nitrogen uptake due to cool soil temperatures.

We have had a lot of reports of poor flower production and blossom blast of peppers, which I am attributing to our cooler night temperatures. The weather hasn't been great for some of our vegetable crops. The wet weather we had early on set us up for the phytophthora we are now seeing in cucurbits.

Was one of those oak wilt samples from Rock County? It was sent out on Monday.

No, it does take about 7 days from when the sample arrives and we process it until we can confirm the presence of the pathogen. It will probably next Wednesday or Thursday before we know. We had one from Rock County last week.

SPECIAL TOPIC: Houseplant Diseases

Presented by Brian Hudelson of the Plant Disease Diagnostic Clinic

This topic was requested, but the PDDC doesn't usually get too many houseplant questions. Brian provided two powerpoint documents to accompany his talk, one of which is by single slide and the other the full version as a handout. If you didn't get it on eMail, you can access it from the PDDC website on the Events calendar.

Root and Crown Rots

The most common problem with houseplants is root and crown rots in the winter. Folks don't want to spend a lot of money heating their home, but they still tend to overwater leading to cool, wet conditions. That cool, wet environment is conducive to crown and root rots if the pathogens are around. Usually they are ubiquitous anywhere plants are grown. Anything with a root potentially has a root rot organism that will attack it.

Pythium and rhizoctonia are the most common organisms we see, as well as thielaviopsis. These water molds really like it cool and wet and they will produce mobile spores that make it easier for the inoculum to spread.

Symptoms of Root and Crown Rots

Wilting:

Vascular tissue is compromised and plants can't take up water so they wilt. The powerpoint showed a slide with symptomatic plants. People often see this symptom and think they should water more, but this is counterproductive since it increases the soil moisture. What they should do is check the soil moisture before they water again. If the soil is dry, the plant could be exhibiting drought stress. If the soil is wet, they should check the roots to see if they are mushy and brown. The foul smell given off is typically caused by a secondary bacterial infection that moves in after root rot infection. There is a slide that shows the typical condition of rotting roots.

Yellowing Leaves:

Other symptoms mimic soil fertility issues, such as marginal browning or yellowing leaves. Again, the roots should be examined to see if they are compromised.

Once the roots are infected, the pathogen may move into the crown and cause crown rot. African violets are susceptible to crown rot.

Preventative/Hygiene Measures

Growing Media:

It is important that the media used for houseplants is a soilless mix or is pasteurized. If you are purchasing it from a garden center, make sure that the bag indicates it has been pasteurized. This means that steam has been passed through it, eliminating root rot organisms. The media should be well-drained and not over-watered. Some potting mixes are too heavy and will retain too much water. Vermiculite or perlite can be added to lighten the media and increase the flow of water.

Disinfest Tools:

If a root rot is found, all tools, containers, and working surfaces should be disinfested with either 10% bleach in water or with 70% isopropyl alcohol (rubbing alcohol). For the volume of disinfectant needed, bleach is more convenient in a home setting. For clay or ceramic containers, clean first to remove excess soil then soak in 10% bleach for 30 minutes, finally rinse to thoroughly remove any residual bleach which is toxic to plants. For tools, 70% alcohol is better as it is not corrosive like bleach.

Avoid Contamination:

Keep in mind that if a root rot is found, moving containers, tools, soil or media around can potentially move the pathogen around.

Fungicide Use:

You might consider applying a fungicide if you have a very high value plant, although this is not the first option I recommend. You probably won't be able to apply these chemicals yourself, but will have to have them applied by professionals at a garden center or greenhouse who offer this service. You also must know what organism is causing the root rot, whether a water mold or a fungus. The chemicals used for control are specific to the organism. Etridiazole, metalaxyl, mefenoxam and fosetyl-AI will control the water molds like pythium or phytophthora. The PCNB, thiophanate-methyl, and fludioxinil are effective on the true fungi, but not the water molds. These are applied as a soil drench by professionals or as a spray treatment. This is usually impractical on such a small scale, and I usually just tell folks to discard the plant and start over.

There are biopesticides such as *Trichoderma* spp. or *Gliocladium* spp. which are antagonistic fungi to the root rot organisms. They are more useful in commercial applications. The homeowner may be able to obtain them on-line and incorporate them into the potting media. This is also usually impractical on such a small scale.

Fungal Leaf Spot and Blight

The home environment is usually not wet enough for fungal leaf diseases to develop but we do see them on occasion. There are quite a few organisms that cause leaf diseases on houseplants, although they usually prefer certain hosts. The powerpoint slide lists some of the organisms such as *Alternaria* spp. *Fusarium* spp, *Phyllostica* spp., *Colletotrichum* spp., etc.

Symptoms

Typical symptoms of fungal leaf diseases are discrete brown spots that are randomly scattered across the leaf surface. This is contrasted with root rots which usually show marginal browning. The powerpoint slide shows some infected leaves and the pattern of spotting.

Control Options

Control the environment:

The most effective way to prevent or control leaf diseases is to control the environment. Some strategies are to increase the space between plants; increase the flow of air across the plants; avoid getting the leaves wet thereby increasing the humidity around the plants by overhead watering, spritzing or sprinkling. Remove any leaves that show spots or any leaves that have dropped, to prevent spread of the organism, which can survive and stay active even on dying or dead leaves.

Fungicides

There are fungicides available through garden centers and greenhouses, and a list was given on the slide of typical active ingredients. Treatment is not usually recommended unless the plant is valuable since it is expensive to treat. Neem oil may be available to the homeowner but it isn't the most effective.

Powdery Mildews

There are many organisms that cause powdery mildews and although they are host specific, they all function in a similar way. They are not usually seen on houseplants because the air is not very humid, especially in the winter. The most common plant affected by powdery mildew is rosemary, usually brought in from outside. Powdery mildews like a dry leaf surface but a humid environment, as is typical next to a kitchen or bathroom sink. Besides rosemary, ivies and African violet flowers (not leaves) are routinely afflicted by powdery mildew.

Control Options

Control the environment:

As with leaf spot diseases, an effective way to prevent powdery mildew is to control the humidity in the environment. Some strategies are to increase the space between plants or use a fan to increase the flow of air across the plants to remove humidity caused by evapotranspiration. Remove any infected leaves.

Resistant varieties:

There are some resistant houseplant varieties, but usually resistance to powdery mildew is found in outside plants like phlox.

Fungicides

There are fungicides available through garden centers and greenhouses, and a list was given on the slide of typical active ingredients. Treatment is not usually recommended unless the plant is valuable since it is expensive to treat. Baking soda/horticultural oil is an effective, low impact, homeowner remedy and the recipe is given on a slide. Canola oil can be substituted for the horticultural oil as there is some evidence that it has some anti-powdery mildew properties. Apply the mixture when relative humidity is 60-70%, because the humidity at the leaf surface will be 90-100%, which is conducive to powdery mildew growth. Do this on a 7-14 day interval. This is effective for rosemary, but you want to treat new growth. Cut back the plant and apply the mixture to uninfected growth.

Xanthomonas Leaf Diseases

Xanthomonas campestris is a bacterial disease, and the pathovars are eponymously named for the host (e.g. *Xanthomonas campestris* pv *poinsettiicola* for the pathovar that infects poinsettia). Some have been given their own species name and the classification is somewhat in flux. If you see one of these organisms on a plant, they will not usually infect other plants unless it is a closely related species.

Symptoms

Typical symptoms of this bacterial leaf disease are angular necrotic areas with yellow haloes, bound by leaf veins with relatively straight lined edges. The bacteria have a hard time crossing the vein. The slide illustrates this characteristic with the ivy and the poinsettia, although it is not as easy to see with the anthurium, which shows a marginal necrosis. The yellow halo is diagnostic for a bacterial disease, although some fungal diseases also exhibit a halo.

If the infection progresses far enough, it can become a bonafide blight. We commonly see this in geraniums that have been brought in from outdoors to overwinter, as shown on the next slide in the powerpoint. Geraniums are susceptible to this disease and it can progress from the necrotic angular spot, to encompass the leaf with leaf collapse. It can also cause plant death in its extreme form. Another plant that is susceptible to *Xanthomonas* is begonia.

Control Options

Do not buy symptomatic plants:

Check your plants before you buy and do not buy them if you see any symptoms.

Practice good hygiene:

Wash your hands after handling infected plants as it is easy to transmit the bacteria to uninfested plants. Use 10% bleach to decontaminate work surfaces and containers, and 70% isopropyl alcohol to disinfect tools. Remove infected plant debris as the organism survives in dead plant tissue. If you see symptomatic plants, it is often best to just get rid of them as it is nearly impossible to eradicate the pathogen.

There are no chemical control options for this pathogen.

Viral Diseases

There are quite a few viruses that affect houseplants and more are being discovered all the time. The slide lists some of the common ones, like Impatiens Necrotic Spot Virus and Tobacco Mosaic Virus. Many of the viruses

have a wide host range and Tobacco Mosaic Virus is the most common virus we see on houseplants. Orchid viruses such as Cymbidium Mosaic Virus and Odontoglossum Ringspot Virus, on the other hand, usually have a narrow host range, but orchids are common houseplants so we do see these. We did see an orchid infected with Cymbidium Mosaic Virus this year.

Symptoms and Diagnosis

It is often difficult to tell which particular virus is present, but some patterns do indicate that some virus is present. Slide 22 shows some typical symptoms of viral diseases: blotchy, light and dark areas or mosaic in the upper left which is probably TMV; random yellow lines shown on the upper right specimen; yellow ring spots on the lower left; sunken or pitted areas on the impatiens on the lower right. On slide 23, other leaf distortions may occur as on the upper left; tissue necrosis or little flecks of necrotic areas in the lower left on the begonia (in the case of Impatiens Necrotic Spot Virus and Tomato Spotted Wilt Virus, check for thrips as that is the vector); Cymbidium Mosaic Virus often causes a leaf spot pattern that looks bacterial or fungal as shown on the orchid on right. On the next slide, viruses infrequently cause death as with this diffenbachia on the left, which is infected with Dasheen Mosaic Virus; a color break phenomenon with stripes or necrotic spots sometimes occurs in flowers with a viral infection, as with the gladiolus in the lower right. Viral infections are usually systemic.

Control Options

Purchase clean plants:

Buy your plants from a reputable source. Check plants prior to purchase and don't buy them if they show any obvious signs of infection. Sometimes infected plants are asymptomatic. Besides the aforementioned physical signs which indicate the presence of a virus, diagnosis of the actual virus can be made prior to purchase, if it is a high value plant. Agdia is one company that will do this testing for you. You can also purchase dipstick tests of the more common viruses listed. The tests are approximately \$5/test.

Practice good hygiene:

If you smoke don't do it around your plants and make sure you wash your hands thoroughly and frequently before touching any plants. Tobacco Mosaic Virus can be picked up from tobacco products and is touch transmitted. Control insects; whiteflies are the most problematic insect indoors and they can transmit virus. Remove and destroy infected plants.

It is important to clean and disinfest tools, working surfaces and your hands, but viruses need a different solution than bacteria, water molds or fungi. Viruses are basically a protein coat encapsulating some genetic material and that protein coat needs to be stripped off to deactivate the virus. Detergents (SDS, Alconox, and TSP) are effective for this and there is a slide that gives some of the formulations that can be used. One of the solutions on the slide uses dried milk and its mode of action is different in that the milk proteins prevent the viral protein from attaching rather than stripping off the viral protein coat. If the milk protein is removed, the virus can resume attachment. With detergents, the deactivation is permanent. Finally, an alcohol dip followed by flaming can kill the virus.

Abiotic Problems

Abiotic problems may be caused by two broad categories of either nutrient abnormalities or by environmental conditions.

Nutrient Abnormalities

Symptoms:

Marginal or uniform yellowing may indicate a deficiency or toxicity. Slide 28 shows a molybdenum deficiency with marginal yellowing on the poinsettia and uniform yellowing on the right that is an iron deficiency. Micronutrient balance can be an issue for houseplants and correct fertility is important. On slide 29, the plant on the left is showing copper toxicity and the one on the right is showing fluorine toxicity, which may occur if water is fluorinated (or chlorinated to prevent human pathogens).

Management:

Water and fertilize appropriately; maintain the correct pH in the soil (and the pH of the water may need adjustment); replant frequently to rejuvenate soil fertility; use an inert container, not something that may leach a toxin into the soil. The plant with the copper toxicity in slide 29 was poisoned when the copper in the container leached into the soil.

Adverse Environmental Conditions

Causes:

Houseplants may be affected by inappropriate temperatures, water stress or light stress. Many houseplants prefer lower light to thrive and more water. In addition, many common houseplants are tropical and do not do well with cooler temperatures. For a tropical plant, cold injury is not necessarily because of freezing temperatures. Many are injured at temperatures in the 40's or 50's. On slide 32, the diffenbachia on the left has sustained a cold injury and on the right, a suffering American ginseng plant has been damaged by heat building up next to a sunny window. Heat and cold injury may look similar to each other. On slide 33, water stress is affecting the philodendron on the left and light stress is affecting the plant on the right. In the latter case, the plant was moved abruptly from low light to high light.

Management:

Maintain the correct temperature and light conditions and water appropriately. It is also important not to subject plants to extreme changes in their environment, whether water, light or temperature. Gradually acclimatize them to their new environment.

Questions/Comments for Brian Hudelson

I have a diffenbachia that grows beautifully until it gets to be 4, 5, or 6 feet tall and then the stems wilt and don't stand up anymore. What might be the cause of that?

Is there any discoloration?

There is no discoloration, it looks very healthy but just starts tipping over.

It might just be that it doesn't have the right conditions to support a really large plant. That is an abiotic problem, more than a true disease. You might just keep it pruned back to prevent drooping.

Could you speak about soluble salts in the soil?

That is an issue we do see. People tend to overfertilize and salts can build up. That can cause root rot like symptoms above ground and physically injure the roots. You can get marginal browning and things that look like root rot or water stress. Repotting will help with that, as well as using the appropriate amount of fertilization. Also, if you leave a plant in the same pot for years and years, you tend to get soluble salt issues.

People also tend to water and leave the pot sitting in the water that runs through, which just reabsorbs all those salts and concentrates them. When you see those salts on the pot, it is time to clean the pot and put in new soil. It is the first thing I tell people since it is such a common problem.

When repotting, be very gentle with the roots and try to get as much soil off them, almost bare root, to get rid of the salt build-up.

ANNOUNCEMENTS

Kevin: We are pleased to welcome Brian, P.J., and Brian Smith to the Spooner Ag Station next Tuesday at 4:00 pm for the Twilight Garden Tour. We have had beautiful display gardens for many years. This year they are looking pretty spectacular if a little behind due to the cool weather. Brian will have plenty of props as he walks through the garden, especially with fungal diseases and for P.J. there are bees and butterflies. Brian Smith will talk about some of the winter problems with fruit trees. We will have a wagon ride and tastings. We are a half mile off Hwy 53, east on Hwy 70.

Sharon: I am scheduled to be on Larry Meillor's Garden Talk radio show today.

FINAL NOTES

The next meeting is August 22. Kevin Schoessow from Sawyer/Burnett/Washburn Counties will be hosting and the special topic will be mushroom/conk ID presented by Dan Lindner of the USDA Forest Service/Forest Products Laboratory.

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 #18 is available at <http://www.plantpath.wisc.edu/wivegdis/>

Topics covered in the issue #18 include:

Late blight updates

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

Cucurbit downy mildew now in WI

Plant Disease Diagnostic Clinic updates

October 29-30 – Hancock Ag Research Station Fresh Market Potato Variety Trial Open House (Jeff Endelman)

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 August 9, 2014 through August 15, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY			

ORNAMENTALS			
Lilac	Lilac Witches'-Broom	Ash yellows phytoplasma	Dane
Maple (Red)	Root Rot	<i>Pythium</i> sp., <i>Rhizoctonia solani</i>	Dane
Maple (Unspecified)	Verticillium Wilt	<i>Verticillium</i> sp.	Dane
Magnolia	Herbicide Damage	None	Green Lake
Oak (Black)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Green
Oak (Bur)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Dane
Oak (Red)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Dane
Oak (Unspecified)	Brown Rot	<i>Laetiporus</i> sp.	Dane
	Herbicide Damage	None	Wood
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Racine
Viburnum	Herbicide Damage	None	Green Lake
FRUIT CROPS			
Apple	Frogeye Leaf Spot	<i>Botryosphaeria obtusa</i>	Columbia, La Crosse
	Phomopsis Canker	<i>Phomopsis</i> sp.	Columbia
	Winter Injury	None	Buffalo, Columbia
Cranberry	Bitter Rot	<i>Colletotrichum acutatum</i>	Wood
	Early Rot	<i>Phyllosticta vacinii</i>	Wood
HERBACEOUS ORNAMENTALS			
Impatiens	Downy Mildew	<i>Plasmopara obducens</i>	Washington
Zinnia	White Mold	<i>Sclerotinia sclerotiorum</i>	Green Lake
NEEDED WOODY ORNAMENTALS			
Spruce (Unspecified)	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	Kenosha
VEGETABLES			
Basil	Downy Mildew	<i>Peronospora belbahrii</i>	Kenosha
Melon	Cercospora Leaf Spot	<i>Cercospora</i> sp.	Green
Onion	Downy Mildew	<i>Peronospora destructor</i>	Jefferson
	Stemphylium Leaf Blight	<i>Stemphylium</i> sp.	Jefferson
Potato	Late Blight	<i>Phytophthora infestans</i>	Portage
Pumpkin	Phytophthora Root and Crown Rot	<i>Phytophthora</i> sp.	Rock
Squash	Angular Leaf Spot	<i>Pseudomonas syringae</i> pv. <i>lachrymans</i>	Sauk
Tomato	Bacterial Canker	<i>Clavibacter michiganensis</i> ps. <i>michiganensis</i>	Wood
	Late Blight	<i>Phytophthora infestans</i>	Racine
	Yellow Top	None	Dodge

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