

Wisconsin Horticulture Update Summary, July 11, 2014

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WI WEATHER REVIEW

Rain lingered in parts of the state early in the week, although overall growing conditions remained mostly favorable for summer crops. The warm and very humid air of July 6 and 7 was replaced by lower humidity levels and more comfortable temperatures mid-week. After-noon highs ranged from the upper 70s to mid-80s and were near normal for this time of year. Low temperatures were in the upper 50s in the far northwest to around 70 in the southeast. Crop development continued to progress rapidly across the state, despite surplus soil moisture and weed pressure. The most advanced corn in the southwestern counties is five to seven feet tall and is tasselling. Overall, 77% of the corn crop was reported in good to excellent condition at the start of the week, a three percentage point decline from last week but 14 points higher than the same time last year. More heat and less rain are needed as crops enter the critical reproductive stages this month. A cooler and drier weather pattern is forecast for Wisconsin next week. (Wisconsin Pest Bulletin, Vol. 59, No. 10, July 10, 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 9, in Wisconsin, the GDDmod 50 ranged from 624 to 1292: Appleton-976; Bayfield-625; Beloit-1292; Big Flats-1100; Crandon-790; Crivitz-837; Cumberland-919; Eau Claire-1074; Green Bay-889; Hancock-1100; Hartford-999; Juneau-1079; LaCrosse-1222; Lone Rock-1243; Madison-1189 Medford-876; Milwaukee-943; Port Edwards-1057; Racine-941; Sullivan-999; Waukesha-999; Wausau-908 (WI Pest Bulletin Volume 59 Number 10 July 10 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>): 621; multiflora rose, full bloom, 643; northern catalpa, first bloom, 675; black vine weevil, first leaf notching due to adult feeding, 677; Washington hawthorn, full bloom, 731; calico scale, egg hatch, 748; greater peach tree borer, adult emergence, 775; rhododendron borer, adult emergence, 815; northern catalpa, full bloom, 816; 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; panicked 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; panicked goldenraintree, first bloom, 1251; Rose-of-Sharon first bloom, 1347; pine needle scale egg hatch-2nd generation, 1349.

INTRODUCTION

Today's WHU host was St. Croix County Horticulture educator Heidi Doering. Specialists were PDDC director Brian Hudelson and Interim Director of Insect Diagnostic Lab P.J. Leisch. The special guest this week is Christelle Guédot, Fruit Entomologist. Discussion participants were representatives of the following counties: Brown (Vijai Pandian); Kenosha (Barb); Milwaukee (Sharon); Portage (Walt); Jackson (Trisha); Washburn/Sawyer (Kevin).

HORTS' SHORTS

This week, county agents reported that insects and leaf diseases, as well as rots dominated questions.

Brian Hudleson: Recommendation to Julie regarding a topic for by July 18. We are considering professional development/education about herbicides. The topic may be broadened to include insecticides. Fungicides may also be included although that is the least important.

Because there are so many new people, we need to disseminate information on how to handle those questions.

Washburn/Sawyer County: It has been busier the last week or two. Summer tourists are back and people are asking questions regarding their properties especially about the bumper crop of mosquitos and no-see-ums and other critters in their homes. There have been surprisingly few calls about leaf diseases given the wet weather. There has been lots of rain, but the growing season is a little behind because of the cool weather. Questions were received concerning weed and insect ID, as well as apple tree decline and dieback. We could use some warmth and dryness.

Jackson County: We are hearing about tree dieback. We are hearing reports of Japanese beetles, but they are not doing much damage yet. Potato beetles are out. We are hearing about Septoria on tomatoes, but no blight yet.

Brown County: Japanese beetles are out, with reported sightings from the eastern side of Green Bay and we are monitoring the amount of damage. Leaf spot diseases, such as Septoria and early blight questions are common due to the amount of rain. Crown rot issues on raspberries, especially in older plantings. There have been quite a few calls about wildlife damage, especially woodchucks and raccoons. Also, we have had some plant ID questions

Portage County: Tree decline issues have been reported, as well as weed and flower ID. There have been only a few calls and walk-ins. Potato beetle larvae on eggplants have been reported. There were a couple of reports of Septoria leaf spot on tomatoes.

Milwaukee County: We have had a very good summer. We have reports of lots of mosquitos due to all the moisture and 4-lined plant bug, which has mostly abated. Moisture and cool temperatures mean that lawns are still green, and it has been very good weather for evergreen recovery from the winter. Other than that, it has been pretty quiet.

Kenosha County: The most common question is about EAB. This is likely due to the fact that it has been here a few years and we are seeing significant tree death. The adults are very obvious now, with sometimes hundreds showing up. Similar issues to everyone else. Other issues include yellowing of leaves due to crown/root rots.

St. Croix County: We have some insect questions, especially grasshoppers. One report is of the grasshoppers devouring a garden and the client wondered what she could use for control. I have seen a tiny grasshopper in my own garden, possibly nymphs. There was a call on likely verticillium wilt on tomatoes and beans, perhaps due to lack of crop rotation in that garden. We had some calls regarding millipedes in the house, and we have now seen Japanese beetle adults. Tomato diseases are showing up. Finally there was a possible sudden oak wilt report, with the trees wilting and declining. (Sidebar: Brian asked for clarification that this was sudden oak wilt, not sudden oak death which is a regulatory issue.) It has been very rainy, although we can see the bottom of the dry runs.

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

The small grasshoppers are puzzling, but Steve Huntzicker in LaCrosse sent a sample in. I have seen a fair number in my own garden in rural Dane County. Grasshoppers usually like it hot and dry, like the summer weather from 2012. They seem to be doing pretty well at the moment, but there are number of fungal diseases and nematodes that should kick in to knock down the population. Until that occurs, a number of products such as Sevin, can be used for control.

The other hot topics are the exploding mosquito and Japanese beetle population, as well as hornets, wasps and ants. We have had some more unusual reports as detailed below.

Eastern Dobsonfly

This large, nearly two-inch, insect, is usually found near water, but the reports we are getting are from flies on house siding. These insects are strong fliers. The male has very large mandibles which look like they can give a heck of a pinch.

http://entnemdept.ufl.edu/creatures/misc/eastern_dobsonfly.htm

Cicada Killers

We are seeing these on campus. Cicada killers are large, intimidating wasps. They are solitary creatures, so are actually fairly docile. Short of picking them up or poking them, they will leave you alone. They get their name from the female dragging a cicada into their ground nests for food for the larvae.

<http://bygl.osu.edu/content/cicada-killers-are-wing-0>

Questions/Comments

The homeowner with the grasshopper problem asked about a product called Nolo bait. Are you familiar with this product and is it available for homeowners?

Nolo bait and another product called Semaspore, are biological controls. The product is no longer available in the state and is not registered here anymore. These products are available and registered in the western states and are common there. They aren't registered in states east of the Mississippi. It may be a marketing issue, but I am not sure why they aren't available. If you find out anything from the company, please let me know what they say.

Do we have any information on where Japanese beetles have been found in the state? Christelle would like to know what has been done because she is getting questions about it.

Chris Williams has done some mapping for the state. Krista Hamilton with DATCP also monitors Japanese beetles and may have maps.

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 June 28 through July 11 are attached to the end of this summary.

It has been very active in the clinic this week, but if I never see another fruit tree sample that has leafed out and collapsed it will be too soon. We are still seeing lingering winter injury issues on apples and cherries.

We saw quite a few problems with fruits and vegetables this week. We are monitoring for late blight emergence in the state so if you get any samples of tomatoes or potatoes with leaf diseases that mimic those symptoms we will analyze them for free unless they are very complicated. Even if you don't think it is late blight, send in the sample tagged to look for late blight. We want to know when the disease arrives so we can figure out what race it is.

Verticillium Wilt on Magnolia

A magnolia sample with dieback was submitted and was diagnosed with verticillium. We were finally able to culture this in the lab, but it took a long time for it to plate out. This sample was atypical in that it usually grows quickly, but we were nearing the cutoff point around ten days, where we would report normally a negative before it finally grew out.

Oak Wilt on Bur Oak

This submission came from a bur oak tree in Dane County, so the fungus is definitely active now.

Downy Mildew on Grapes

The grape fruits showed symptoms of bronzing, and almost mummification. There was plenty of sporulation so we could do a tape mount for microscopic inspection to obtain a definitive diagnosis.

Black Rot on Grape

We also had some grapes submitted with black rot or what is also known as Guignardia Leaf Spot Disease on ornamentals. The symptoms of this disease are distinct circular necrotic lesions on the leaves and fruits with a bleached center and maroon or blackish edges. There is a loose circle of pimple-like fruiting bodies on this blackish edge of the necrotic area. As the disease progresses and encompasses the fruit, it will cause it to mummify. The fruits will look bumpy and pimply.

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

Fusarium oxysporum on Asparagus and Celery

The asparagus came in with multiple diseases including anthracnose, rust, alternaria and phomopsis canker, but one we hadn't seen yet this year was *F. oxysporum*. It is distinctive as the culture presents as lovely lavender growth on culture media. It is a common disease that causes root and crown rot.

On celery, *F. oxysporum* causes a yellows disease. The plants were stunted and yellowish. When we cut open the celery we were able to see the browning of the vascular tissue and we recovered the fungus in culture.

Crown Gall on Kohlrabi

We had an eMail exchange with Tim Miller in Winnebago County on behalf of a home grower who was growing a variety of cole crops and lettuces all showing symptoms, but a kohlrabi sample was submitted. This disease causes an amorphous mass of tissue on the base or bulb of the kohlrabi plant.

Tomato Problems: Walnut Toxicity, Blossom End Rot, Septoria, Herbicide Damage

We received tomato samples this week showing a variety of biotic and abiotic problems. The abiotic injuries included walnut toxicity, blossom end rot from a commercial grower, and herbicide damage.

The biotic problem was attributed to Septoria leaf spot.

Questions/Comments

Two of our four tomato plants totally wilted overnight. Any ideas and do you need a sample?

Are there any walnut trees around? This is one of the first questions we have with this symptom. If the plants are growing over walnut roots, the juglone toxin may be poisoning the tomatoes. Some other possibilities are fungal diseases like verticillium or fusarium which can cause sudden loss of turgidity, but if it is a new garden area for tomato production these diseases are less likely. Bacterial blight can also cause this, but you should be able to see a diseased or necrotic area at the base of the stem at the soil line. Bring in a leaf sample and tag if for late blight and we will diagnose it for free.

There are challenges regarding diseases on ornamentals. For instance, there is a variety of Canadian ornamental cherry commonly sold in big box stores or pavement type temporary green nurseries, that is very susceptible to black knot disease (poop on a stick). Wild Prunus sp. can serve as a source of inoculum for this. One disappointed homeowner was considering basal pruning as a management technique due to the massive infection on the tree.

If you are able to collect some of the knots and send those samples, we would gladly receive them. One project we are considering is to develop a reference collection of common diseases with some sample kits to send out for educational purposes to MGVs, PHAs, or county agents. We do need to amass a certain number of samples to accomplish this project.

Walt had a geranium question where the plant is exhibiting yellowing leaves with angular interveinal progression. It looks like a bacterial problem, but the person didn't want to send a sample.

This could be a *Xanthomonas* infection. I have some potted geraniums that are showing the same symptoms with wedge-shaped chlorotic patches. This is a common problem with geraniums. If you have a microscope you can try to determine if the infection is bacterial. Take a piece of leaf that is about 0.75 in and includes a vein that spans both healthy and diseased area and mount it on a slide with a drop of water. Slice across the center of the vein making sure there is a continuous film of water, then cover the slide with a cover slip. Focus on the edge of the cut and look for oozing granular material. The only bacterial disease we normally see on that host is that *Xanthomonas* bacteria. You should be able to see it with 200x power.

SPECIAL TOPIC: Spotted Wing *Drosophila*

Presented by Christelle Guédot, Fruit Entomologist

Introduction

Christelle is here to give an update on the Spotted Wing *Drosophila* (SWD) incursion to the state.

Monitoring Project

We have enlisted county agents, research stations, some faculty, and growers to monitor the spread of this pest in the state. We monitored from Door to Bayfield, Pierce, and to southern Wisconsin. We use both apple cider vinegar and yeast/sugar baits. In 2013, we asked people to trap from early April until the end of October. Although we were trapping earlier than that, we weren't catching anything.

We ask that people monitor for two consecutive weeks to get first occurrence of adults. If you detect them, let Christelle or P.J. know so they can map the spread on the website.

Historic Progression of Incursion

2008: First detection in the state of Florida.

2012: We did not have a formal monitoring program in place although DATCP was doing some monitoring. We had confirmed presence in 11 counties, and suspected presence in seven counties.

2013: A formal monitoring program was established. SWD had confirmed presence in 25 counties and 4 counties had suspected presence. The suspected occurrences were only because we couldn't rear the larvae to adults out of the fruit. First detection was in Vernon County on June 24. Most of the infestations occurred in raspberries, although Bayfield reported problems in strawberries and cherries also.

2014: All states have detection except Nevada, Arizona, North Dakota, and New Mexico.

2014 Regional Detection

Minnesota:

Detected on June 06, 2014. This date was a record for emergence.

Michigan:

Detected on June 26, 2014

Wisconsin:

Detected on June 30, 2014 in Vernon County.

Detected week of July 5-11, 2014 in Door, Dane, LaCrosse, and Rock counties. Larvae in the fruit have been detected in Washington and Monroe counties. Jackson County was still negative.

Details of 2013 Population Monitoring

We used two different baits for trapping; apple cider vinegar and yeast/sugar. With apple cider vinegar our first occurrence was on July 07. Yeast/sugar, considered a more attractive bait, yielded flies on June 24.

In mid-August, we were catching <10 flies/trap/week; from mid-August to September we caught 20-40 flies/trap/week with the peak of females trapped on September 22. We were still catching >20 flies/trap/week on

October 20 with yeast/sugar bait and even in mid-November with snow on the ground we were catching flies. There was still a big population in the woods, possibly looking for new hosts because they aren't in the crops.

Factors in Infestation

Timing is important as to whether damage is significant. All small fruits can be affected, but also peaches. Most of the infestations occur in raspberries because the timing of emergence with the availability of other fruit may not be in sync.

We are still trying to figure out where the flies go after the season ends in early winter. They may be going into the woods to find new hosts or into the leaf litter for protection since low temperatures do cause death. Wherever they go, we don't see any from then until June. It may take awhile after they first emerge to ramp up enough of a population to cause damage, even though susceptible fruits like strawberries are available. We don't really know what the flies are doing in the spring, or in the late fall when they aren't in the crops.

Identification of SWD

The definitive diagnosis of SWD is the presence of the adult fruit fly on *unripened* fruit.

Trapping Information

The website www.SWDwisconsin gives some information on trapping, monitoring, and management. A very easy way to trap the adults is to add yeast/sugar solution to a deli cup with holes in the top. There are commercial traps/baits available from Great Lakes IPM. Lures are 10/\$20 and traps cost \$6 each. The traps are the same deli cups, but instead of holes there is a mesh spot on the lid that gives a bigger entry so it traps a little better.

To check for larvae in the fruit, put the fruit into a baggie, close it up, and allow the adults to develop in the fruit. The adults are necessary for definitive ID. The fruit will start to liquefy as the larvae feed, so make sure that the bag is drained to avoid drowning the insects.

Questions/Comments

Is there an overwintering population? If not, you might suspect that it would be seen first in the southern part of the state.

We don't have proof of that, but both Phil Pelliteri and I suspect that we do have an overwintering population. Vernon County, which is further north, has been the first to detect the insect every year and people who had SWD last year have it this year. There is yet unpublished evidence from Oregon concerning overwintering populations. It is possible that SWD has a winter and summer morph, similar to pear psylla.

According to their research, in August there was 100% summer form for females. By October, this had changed to 50%/50% summer/winter form and by December it was 100% winter form. They tested the cold hardiness of both forms and found that it took 23-28 days at 1^o C to reach 50% mortality for the summer form females, but 180 days for the winter form females. This doesn't mean that they are overwintering, but it does mean there is a more cold tolerant form.

How long should it take for the larvae to develop into adults?

It takes approximately 10 days from egg to adult.

What control options are there?

The website gives specific control options on the management tab, which are specific to the crop. There is information for raspberries, blueberries, grapes, and cherries because the insecticide depends on the crop.

For home gardeners, the main cultural technique is to pick all ripe fruit and don't leave any to fall on the ground. Do not leave any soft fruit to rot or drop to the ground as the larvae will continue to develop. Do not put the soft/rotten fruit into the compost pile as the larvae will continue to develop. You can freeze the rotten fruit to kill the larvae or you can solarize it by putting them in a sealed plastic bag in the sun to cook. It can be buried, but at least 1 foot deep. You can also feed the soft fruit to your chickens. Good garden hygiene is important.

Once the fruit is picked, it should be refrigerated as soon as possible because the cold temperatures impede growth. Although the eggs and worms are unattractive, there is no health issue to eating the wormy fruit. If you are making jam, the larvae will float.

What do we tell growers about marketing and selling the fruits? Are they communicating the problem to the customers or just not selling the fruit?

We are open to suggestions regarding this question. Last year at the Wisconsin Fresh Fruit Vegetable Conference, I looked for someone to talk to about dealing with this and couldn't find anyone on campus. Certainly, any customer will see the worms in the fruit so it makes no sense to deny it.

Heidi will be hosting the Small Fruits Field Walk on July 22 and they will be talking about that. One grower, Greg Walls who is hosting, lost 20-30% of his crop so may be able to give some information on dealing with the problem with customers. He can give a farmer's perspective on some of those strategies.

ANNOUNCEMENTS

Walt in Portage County: Portage County MGVs will have their garden walk with seven beautiful gardens for \$10 on Friday and Saturday July 11 and 12.

Kevin in Spooner AG research station: MGVs in Spooner are hosting a creative container and vertical gardening workshop in the teaching and display gardens on Tuesday, July 15 at 6 pm. The focus is on creative containers, such as a bathtub, toilet, flower bed and antique manure spreader.

Vijai in Brown County: Green Bay will be hosting a field day on August 7. Specialists will be on hand to talk about vegetable gardening, fruits and invasive species. More information is on the Brown County website (https://www.co.brown.wi.us/i/f/uw_extension/General%20Page/Extension%20Happenings/July%202014.pdf). Early registration is \$20/person.

July 22: Small Fruits Field Walk near River Falls with Drs. Brian Smith, Christelle Guédot, and Patti McManus.
July 22: Vineyard walk at Trout Brook Vineyard in Hudson. Heidi and Kevin are coordinating the event.

FINAL NOTES

The next meeting is July 18. Kristin from Waukesha County will be hosting and Dr. Laura Jull will present on woody ornamentals.

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

Due to the holiday on July 4, there are two updates; Vegetable Crop Update Newsletter #12 and #13 are available at <http://www.plantpath.wisc.edu/wivegdis/>

Topics covered in the issue #12 include:

Late blight updates
 Blitecast and P-Days for late blight and early blight management
 Cucurbit downy mildew update
 Bacterial diseases in vegetable crops
 Agenda for Hancock Potato Field Day - July 22, 2014

Topics covered in the issue #13 include:

Potato update
 Late blight updates
 Blitecast and P-Days for late blight and early blight management
 Cucurbit downy mildew update
 Hops update

PDDC UPDATE

This week, there are summaries covering the period of June 28, 2014 through July 11, 2014.

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 June 28, 2014 through July 4, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Elm	Dutch Elm Disease	<i>Ophiostoma ulmi</i>	Dane
Maple (Unspecified)	Anthracnose	<i>Discula</i> sp.	Wood
	Steganosporium Canker	<i>Steganosporium</i> sp.	Waukesha
	Venturia Leaf Blotch	<i>Cladosporium humile</i>	Wood
FRUIT CROPS			
Apple	Winter Injury	None	Eau Claire, Jackson
Strawberry	Root Rot	<i>Pythium</i> sp.	Brown
	Winter Injury	None	Brown

HERBACEOUS ORNAMENTALS			
Dahlia	Root/Crown Rot	<i>Pythium</i> sp.	Adams
Goat's Beard	Crown Rot	<i>Pythium</i> sp., <i>Fusarium</i> sp.	Dane
NEEDED WOODY ORNAMENTALS			
Arborvitae	Phyllosticta Needle Blight	<i>Phyllosticta</i> sp.	Lincoln
	Phomopsis Canker	<i>Phomopsis</i> sp.	Lincoln
	Winter Injury	None	Lincoln
Juniper	Winter Injury	None	La Crosse
Spruce (Blue)	Phomopsis Canker	<i>Phomopsis</i> sp.	La Crosse, Waukesha
	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	La Crosse, Waukesha
VEGETABLES			
Pepper	Bacterial Spot	<i>Xanthomonas campestris</i> pv. <i>vesicatoria</i>	Dane
Tomato	Bacterial Spot	<i>Xanthomonas</i> sp.	Dane
	Septoria Leaf Spot	None	Portage
SPECIALTY CROPS			
Hop	Root/Crown Rot	<i>Rhizoctonia</i> sp., <i>Fusarium</i> sp.	Dane

The following diseases/disorders have been identified at the PDDC from July 5, 2014 through July 11, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Cherry (Weeping)	Phomopsis Canker	<i>Phomopsis</i> sp.	Waukesha
	Winter Injury	None	Waukesha
Deutzia	Phoma Canker	<i>Phoma</i> sp.	Brown
Elderberry	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
Magnolia	Verticillium Wilt	<i>Verticillium</i> sp.	Waukesha
Maple (Unspecified)	Cytospora Canker	<i>Cytospora</i> sp.	Marathon
	Herbicide Damage	None	Green Lake
Oak (Bur)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Dane
FRUIT CROPS			
Apple	Phyllosticta Leaf Spot	<i>Phyllosticta</i> sp.	Portage
	Root Rot	<i>Pythium</i> sp., <i>Fusarium</i> spp.	Dane, Washington
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Portage
	Winter Injury	None	Dane, Portage, Washington, Winnebago
Grape	Black Rot	<i>Phyllosticta ampellicida</i>	Jefferson
	Downy Mildew	<i>Plasmopara viticola</i>	Dane
NEEDED WOODY ORNAMENTALS			
Fir (Balsam)	Rhizosphaera Needle Cast	<i>Rhizosphaera</i> sp.	La Crosse

Spruce (Blue)	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	Marquette
	Winter Injury	None	Marquette
Spruce (White)	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	Marquette
VEGETABLES			
Asparagus	Alternaria Leaf Spot	<i>Alternaria</i> sp.	Waushara
	Anthracnose	<i>Colletotrichum</i> sp.	Waushara
	Phomopsis Canker	<i>Phomopsis</i> sp.	Waushara
	Root/Crown/Stem Rot	<i>Fusarium oxysporum</i>	Waushara
	Rust	<i>Puccinia asparagi</i>	Waushara
Celery	Fusarium Yellow	<i>Fusarium oxysporum</i>	Waushara
	Root Rot	<i>Pythium</i> sp.	Waushara
Kohlrabi	Crown Gall	<i>Agrobacterium tumefaciens</i>	Winnebago
Tomato	Black Walnut Toxicity	None	Dane
	Blossom End Rot	None	Dane
	Herbicide Damage	None	Columbia
	Septoria Leaf Spot	<i>Septoria lycopersici</i>	Dane, Racine

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