

Wisconsin Horticulture Update Summary, August 14, 2015

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WI WEATHER REVIEW

Scattered early-week showers and moderate temperatures maintained generally favorable growing conditions for summer crops in the latter stages of development. Rain benefited corn and soybeans in portions of central and northern Wisconsin, but moisture remained limited in southern areas. According to the current US Drought Monitor, moderate drought conditions and pockets of abnormal dryness have developed in the southwest counties, where topsoil moisture ratings were 46% very short or short at the start of the week. Rainfall deficits have also increased since July in the south-central, southeast and east-central regions, and topsoil moisture ratings there are now 44-60% very short or short for croplands. The late summer dry weather trend could adversely affect corn and soybeans during the most critical grain- and pod-filling stages if rain continues to bypass southern Wisconsin. (Issue No.17 of Wisconsin Pest Bulletin)

Average soil temperatures at 2" as of August 14, 2015: Hancock 81.1, Arlington 85.8
(http://agwx.soils.wisc.edu/uwex_agwx/awon/awon_seven_day)

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 1364 to 2088. Following is a list of DD as of Aug 13, 2015 for the following cities: Appleton-1745 Bayfield-1364; Beloit-2081; Big Flats-1870; Crandon-1419; Crivitz-1537; Cumberland-1673; Eau Claire-1887; Fond du Lac-1719; Green Bay-1642; Hancock-1870; Hartford-1681; Juneau-1815; LaCrosse-2088; Lone Rock-1917; Madison-1966; Medford-1533; Milwaukee-1634; Port Edwards-1804; Racine-1628; Sullivan-1681; Waukesha-1681; Wausau-1603. To determine the GDD of any location in Wisconsin, use the degree day calculator at the UW Extension Ag Weather webpage:

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

To put it in perspective, following is an abbreviated list of plant and insect phenological stages in relation to GDD accumulations at which events occur (<http://www.entomology.umn.edu/cues/Web/049DegreeDays.pdf>): Ural false-spirea, first bloom, 1,170; paniced golden-rain-tree, first bloom, 1251; Rose-of-Sharon first bloom, 1347; **pine needle scale egg hatch-2nd generation**, 1349; **euonymus scale-2nd egg hatch**, 1923.

WI CROP PROGRESS AND CONDITION

Copy and paste the following link into your browser to find weather review and reports from around the state for the last week.

http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crop_Progress_&_Condition/2015/WI_08_17_15.pdf

INTRODUCTION

The host for today's WHU was Scott Reuss from Marinette/Florence/Oconto Counties; PDDC Director Brian Hudelson was the specialist participant. Brian Smith of the UW-River Falls/Extension Fruit Specialist sent one file and gave a presentation on Novelty Fruits. Participants in today's discussions were representatives from the following counties: Brown (Vijai Pandian), Eau Claire (Erin LaFaive), Jackson (Trisha Wagner), Kenosha (Barb Larson), Marquette (Lyssa Seefeldt), Outagamie (Ann Donnellan), Portage (Walt Rasmussen), Rock (Christy Marsden), St. Croix (Heidi Doering), Walworth (Chrissy Wen), Washburn/Sawyer/Burnett (Kevin Schoessow), Waukesha (Kristin Krokowski and Anne).

HORTS' SHORTS

Agents report the following issues to be of interest this week:

Brown County: We did finally get rain this week after 2-3 weeks with none and the grass has sprung back and is green. Calls have been about slime mold in lawns, powdery mildew on cucurbits, blossom end rot, growth cracks on tomatoes and bacterial speck on tomatoes. We are also getting calls about wasps building nests in concealed places and magnolia scale. Another issue is tree decline, with some reports of sudden branch wilting. We sent in a sample of a branch that suddenly wilted to be tested for verticillium wilt.

Eau Claire County: We are getting calls about tree decline that run the gamut from cosmetic issues to oak wilt, and we are also hearing about apple trees. Japanese beetles are here, but I haven't had any calls about them. We are seeing the second generation of cabbage maggots and there are a lot of eggs on the cole crops. We also have blossom end rot in the teaching garden, but no reports of that from anyone else. We are getting calls about early blight, though. We have had enough moisture, but lawns are slowing down because it is really hot here.

Jackson County: We are also getting tree decline calls, as well as Septoria on tomato. Last week I sent in a sample for suspected oak wilt.

Marquette County: Calls this week were about tree decline. It is pretty dry even though we got a little rain last week and lawns are going dormant and turning brown because the sandy soil doesn't retain moisture.

Marinette/Florence/Oconto Counties: We are getting a lot of calls about tree issues and disease issues. Yesterday, the southern half of the county got rain, but it completely missed the northern half. It has been dry in some places, wet in others. I caught my first SWD yesterday, but we don't have a lot of insect pests this year. Nothing exceptionally new happened.

Kenosha County: With the slowdown in lawn growth, we are seeing a lot of rust in lawns and I did send a sample into Paul Koch for the rust study.

Outagamie County: We had calls about bees and how to control them. We received 1.5 inches of rain from the last rain storm. One interesting issue was the finding of water hemp in a soybean field. It took a phenomenal amount of Round-up to control it and it is still coming back. That is a huge weed which seems to be impacting agricultural crops.

Portage County: I measured 2.2 inches of rain in my gauge. We are getting more calls about Japanese beetles. I enlisted Mark's and Laura's help for some weed IDs. I did find some red thread in lawns; there were some patchy pink areas in the grass.

Rock County: We have similar issues as everyone else. It hasn't rained here since July 18 and the grass is browning so other plants are also being affected. Tree issues are still being reported.

St. Croix County: I had one of the late blight cases that Brian talked about; it took out a whole chunk of tomatoes and potatoes in my garden. I have had a few calls about SWD. Even though we are between the raspberry seasons, people are still seeing these so I am giving advice about that. I have had a few calls about Japanese beetles and someone brought in a Japanese beetle from an apple tree. We are a little dry here, and that is keeping the lawn from growing.

Walworth County: Not much different than other reports except that we have magnolia scale in massive amounts. I drove around Fontana on Lake Geneva and not one yard was spared. They were all either shiny with the honeydew or had sooty mold. The honeydew is covering everything from the crawlers coming out.

Washburn/Sawyer/Burnett Counties: Tree decline is still an issue! We are doing well with moisture but it is hotter now so we getting more calls on leaf diseases, and fusarium and verticillium wilt. There isn't much insect activity here although I did take a call from someone in Cumberland about Japanese beetles. at least no true Japanese beetles.

Waukesha County: It is seriously dry here; our last significant rain was around July 4. I am seeing a lot of scorch on tree leaf edges and there are lots of weeds in the dormant lawns. The grass isn't growing so the invasives are coming in and people want to know what they are. We had an interesting case of bacterial spot on peach which was likely due to poor siting of the tree; it gets less than 6 hours of sunlight. The caller wanted to know why it wasn't doing well so we talked through that.

Comment from Walt: What is everyone doing about the scale? I have had calls about maples and I have several oaks that are looking bad because of it. My truck is so sticky, you can hardly let go of it.

Chrissy: I talked to PJ about this yesterday and he said there isn't too much you can do. It is covering huge oaks and huge hackberries and systemics aren't that effective just because of the size of the infestation. He said that

there aren't too many beneficials out there controlling it, so there is an imbalance. He mentioned that magnolia scale, lecanium scale, and some other specific scales like tuliptree scale, are pretty bad this year. The scale is secondary to the amount of sap the scale is generating; the sticky stuff is covering everything.

SPECIALIST REPORT: Insect Diagnostic Lab Update

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

There was no insect update this week.

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

It has been busy week for leaf diseases on woody ornamentals, especially variants of anthracnose. We diagnosed verticillium wilt on leatherwood, but there are no literature references to verticillium on this species. We will be doing Koch's Postulates on that sample. It did come from a yard with a history of verticillium problems. We also had a serviceberry with a case of cedar apple rust showing symptoms on the leaves. We diagnosed numerous fruit tree species such as apples, cherries, plums, blueberries with various root and crown rot pathogens. We found Phytophthora, Rhizoctonia, and Pythium. We had a spruce sample with Diplodia and on this particular sample, the branch tips had died back and curled and they were filled with the Diplodia spores. For vegetables, we diagnosed crown gall on broccoli and had a case of basil downy mildew. We confirmed late blight on tomatoes in Polk County and St. Croix County.

Questions

Crown Gall Management

How do you control for crown gall on broccoli?

We diagnosed crown gall, but there is no reference in the literature to it affecting brassicas. The best management strategy is not to plant susceptible hosts, but the pathogen does have a wide host range. It is possible that the agrobacterium used in GMO to transform brassica genes could introduce genes that make it susceptible to that organism. You can also replace the soil in the bed, since agrobacterium is ubiquitous. If it is growing in raised beds, you can do a 10 minute bleach rinse of the boards, but it may take multiple treatments. You could also replace the boards.

Possible Late Blight on Tomato

Did you diagnose anything on the tomato plant that had lesions on the leaves and fruit? It looked like late blight.

If it was late blight, you would have already heard from us. It is still in process, but we are culturing it to see if it is bacterial.

Garlic Sample

Any diagnosis yet on the garlic we sent in?

We found Fusarium oxysporum in both the stems and the cloves. Any symptomatic garlic from that area should not be sold as planting stock. We also had an onion sample with symptoms on the basal plate. That pathogen usually enters from a damaged area, but it is a strong pathogen.

SPECIAL TOPIC: Novelty Fruits

Presented by Brian Smith, UW-River Falls/Extension, Dept. of Plant and Earth Science, Fruit Crop Specialist

Brian sent a handout to accompany his presentation.

Overview of Novelty Fruit Culture

Novelty means different things. One example is the cranberry. What is more common than a cranberry in Wisconsin? Most people don't know they can easily be grown in a home yard and can provide a ground cover. Novelty fruits are those not usually found in a grocery store so we have to grow them to get what we think would work on a site.

Traits to Consider When Choosing

When choosing a novelty fruit to grow, you will have more success if you choose tough fruits from the Great Plains. Some are very drought tolerant and also have some aesthetic landscaping value to them.

Most can be made into jelly, and some can be made into wine. When determining which species to plant, disease resistance and flavor are two considerations. Most of the novelty fruits don't have good enough flavor without some sort of processing, but some do. Some of the other traits to look for (just like with apples) are those that have late blooms to avoid frost damage, have some ornamental qualities, whose fruit has some storage quality and whether hardiness has been tested in your growing zone.

Many new or novelty fruits have not been thoroughly tested for adaptation to an area. If they are new to an area, most people don't grow it and there is probably a reason for that. If they have been around awhile, maybe they just didn't catch on and finding a source is difficult.

There have been some projects to develop novelty fruits. Brian worked with Dale Secher at Carandale Farms in Oregon, Wisconsin who started with an Agricultural Development and Diversification (ADD) grant and has done a lot with novelty fruits. He has hundreds of different fruits at his farm.

<http://uncommonfruit.cias.wisc.edu/>

Another consideration for novelty fruit is whether they are adapted. More and more of the novelty fruits have not been tested and are being offered for sale before we know about their adaptation. Everyone wants to cash in on the royalties from plant patents and there isn't enough emphasis on testing them. Most people listening in to this presentation are aware of winter hardiness zones. Sometimes those zones are stretched on novelty fruits. For instance, River Falls is really in Zone 3b, but the hardiness maps put it in Zone 4a. There are lots of variations due to topography, and we don't really know how the novelty fruit will adapt.

Maintenance of Novelty Fruit Crops

Just like with lawns, nobody want to spend too much time on maintenance of novelty fruit crops. Slide 6 shows that many novelty fruit crops do not require a lot of maintenance. Most of the crops which will be talked about require low maintenance and need very few sprays and are tolerant of stressful conditions.

Novelty Fruit Choices

Brian quickly went through the slides, picking up a few points from each. See the handout for more information about the different fruits.

Black Chokeberry or Aronia

Aronia has been used as an ornamental for many years. About 100 years ago, Russian and Polish breeders took some US germplasm and starting breeding for fruit size. The cultivars 'Nero' and 'Viking' came out of those breeding programs and the fruit is about 2-4 times larger than the landscaping chokeberries. This is an up and coming fruit in Wisconsin. There are about 300 acres planted to aronia and it is all going to processing. Slides 7-8 describe some of the available cultivars, but 'Viking' is the top pick because of fruit size.

Buffaloberry

Buffaloberry or Silver Buffaloberry is a native to the Great Plains and is very drought resistant. The fruits are high in lycopene and antioxidants. The bush doesn't get very large and the fruit also tastes good raw, which is not true for most of these fruits.

Cranberry

As Brian mentioned before, cranberries can be grown in the home garden by providing the organic matter, the moisture, and the acidic pH these need to do well. They can be grown in rows like strawberries and covered in the winter.

Clove Currant

Clove currant is a favorite and would be a good commercial fruit. It is a very tasty black currant and way better tasting to eat out of hand than a normal black currant. The flowers have exceptional fragrance in the spring that smells just like cloves and it has fruited every year in my garden. It makes fantastic juice, jelly and wine. 'Crandall' is a good cultivar.

Elderberry

New varieties have been introduced recently. A grower friend in Missouri has released a vigorous, large fruited specimen called 'Wyldeewood'. Both 'Marge' and 'Bob Gordon' are superior to older cultivars like 'Adams', 'Johns', 'Nova' and 'York'. The ornamental varieties such as 'Black Lace' and 'Black Beauty' don't perform as well. They are marginally hardy so they need a protected spot and ample moisture, and most of them don't fruit. These latter cultivars are grown for their purple foliage and pink flowers.

Gooseberry

Gooseberries are halfway novelty and halfway commercial and are common. Gooseberries are tolerant of home gardening conditions, taking some shade. 'Hinnonmaki Red' is a very good commercial cultivar so it will do well in the backyard, too.

Haskaps or Honeyberry

An up and coming crop for the home garden is haskaps or honeyberries. The Carrington Research Extension Center in North Dakota and Bob Bors in Saskatoon at the University of Saskatchewan are testing a whole series of new cultivars. Honeyberries are in the honeysuckle genus *Lonicera*. They bloom extremely early but don't seem to suffer frost damage. If they fruit in North Dakota, that is a good endorsement for growing in Wisconsin. They are long-lived shrubs. Slides 20-28 provide information about numerous cultivars as well as the best pollinizing companion species.

Juneberry or Saskatoon

Thousands of acres are planted to saskatoons in Canada. There are a few grown commercially in Wisconsin and in the upper midwest and they are very nice for the home yard. There are tall and compact varieties available. One compact cultivar is 'Regent'. There is a resurgence of interest in juneberries. They are considered the poor man's alternative to blueberries, but they are more tolerant of drought and alkaline soil. There is a series named after members of the British royal family: 'Princess Diana', 'Prince William', 'Fergie'. Slides 29-32 list some of the cultivars of *Amelanchier canadensis*, *A. alnifolia*, and *A. stolonifera*. St. Lawrence Nursery purveyed many of these cultivars, but is currently shut down.

Jostaberry

This fruit is a hybrid of gooseberries and black currants. It has been a poor performer for Brian and he has never seen them fruit with much success anywhere he has seen them growing.

Hardy Kiwi

Research is being done in both Minnesota and Michigan State, so there is a good opportunity for them to be introduced. Most of them are hybrids of the various red and green species. Slides 34-37 give some cultural information as well as cultivars and sources for hardy kiwis. Some hardy kiwi cultivars are 'Anna', 'Ken's Red', and 'Michigan State'.

Mulberry

'Northrop' is the hardiest. St. Lawrence nursery was a good source for these plants and other novelty fruits. They shut down after this spring and may reopen in 2 or 3 years. There are red, black, and white varieties and they are very prolific. Mulberries usually have dioecious flowers so you need males and females, but there are some with perfect flowers as well.

Seaberry

Seaberry is a very tough plant and is a good fencing plant for pesky neighbors due to its large thorns and its 10-12 foot height. You need 1 male for every 3-4 females for pollination. The fruits are astringent but very high in antioxidants; you need to process this one.

Questions/Comments

Apple Tree Decline

We are still hearing about apple tree decline and many of the affected trees have root issues. We are also hearing about apple replant disease when the new plant is put in the same hole. No pathogens are being found so the cause is pointing to environmental issues.

Apple tree decline is a set of complex issues with multiple organisms and environmental issues. Nematodes, Rhizoctonia, Pythium, and Phytophthora can all be involved at different levels. Environmental factors, including poor winter hardiness, heavy soil or subsoil, frost pockets and poor drainage, can all play a part. If the tree is already stressed because of these issues, then it predisposes the tree to winter injury. In a poor site, heavy rainfall or fluctuating temperatures exacerbate any issues. You may not see it right away, but it may show up 2 or 3 years down the road especially in a year of heavy fruit load or a stressful time like fluctuating conditions of cool and wet or drought.

To avoid apple replant disease, don't put the replacement in the exact same hole. Plant the replacements exactly in between old rows so you are offset as far as possible from the old roots. Many times, the replacements are dwarf trees so that spacing becomes a problem. It is best to choose a new site, prepared with good soil and good drainage. That contributes to longevity.

Is there a rootstock that is better for replanting? I have heard that Geneva out of New York is a good one for replanting. Is there good data about it?

There isn't enough good data on the Geneva rootstocks. Geneva rootstocks 16 and 41 look good, but there is only about 5 years of data and that isn't enough to recommend it commercially. There is anecdotal evidence from some northern orchards that their trees on Geneva rootstocks made it through the winter better than Budagovsky 9 or on some of the traditional rootstocks like M26 or M7. Budagovsky 9 appears to be fully winter hardy and fully dwarf and does have some problems, but is better than Malling 9 for winter hardiness and some of the deep diseases becoming manifested.

Goji Berry

Can you comment about goji berry?

That one is not as hardy as claimed; it is only borderline hardy in Zone 5. I have never heard of anyone successfully growing except in southern Wisconsin and then only sporadically successful. It can't tolerate the climate in the northern half of the state.

Thimbleberry

What about thimbleberries?

They are related to plants in the Pacific Northwest and get some of the same problems as raspberries and blackberries. They are not overly successful here because they like a cooler summer.

Shade Tolerant Species

Are any of these fruits shade tolerant? How many years for full production?

Thimbleberries are shade tolerant and kiwis are shade tolerant once established. Kiwis need special protection while they are getting established, but can become rampant. There was even a report out of Michigan where they were concerned that the kiwis would take over a tree. It usually takes 4-5 years before you get full production.

Honeyberry Production

How many years does it take for Honeyberry production?

They will start setting a little fruit in a couple of years. I am going to be setting out a small replicated trial with some plants that are a couple of years old and setting a small amount of fruit. At Carrington Research Station in North Dakota, honeyberries were setting a fair amount of fruit by year 3, but it usually takes 4-5 years before you get full production.

Tundra and Borealis are in their second year and bloomed, but we got no fruit.

Those two do bloom fairly early. In North Dakota, older varieties did seem to fruit more sporadically.

Jostaberry Performance

We have had good performance for our second year jostaberries here in Green Bay. Even though we didn't have snow cover until January, we got quite a bit of fruit. It has a sweet and sour taste. The growth has been phenomenal.

They seem to grow well, but have poor fruit production. I am glad to hear you had such success with them because they are winter hardy. Do you have any other Ribes species around to pollinize them?

We have gooseberries and both red and black currants nearby.

The black currant should be a good pollinizer for them if the bloom time overlaps.

The fruit is a little bigger than a gooseberry, but there aren't any spines.

Which Fruits Require Cooking?

Can some of these fruits be eaten raw or do all of them need to be processed or cooked? I know that elderberry needs to be cooked.

Quite a few of them can be eaten but you wouldn't want to, like chokeberry. Buffaloberry can be eaten and is okay, but even cranberries need processing. Clove currants are very good raw with a special complex flavor and are not astringent. Elderberries need to be processed. If you had the time and patience to grow and test a lot of cultivars, gooseberries are a connoisseur's delight. A grower friend sent me a sample tray overnight a couple of years ago and they were phenomenal. Honeyberries are a little tart, but good. Kiwis, mulberries, and juneberries are all mild and can be eaten raw. Sea buckthorn can't be eaten raw.

Are Any Species Invasive?

Are any of these species invasive? You hear buckthorn and get anxious.

Most of these I checked off as non-invasive. Autumn olive was knocked off the list despite having good fruit potential because it is highly invasive.

Spotted Wing Drosophila Resistance?

All of these are resistant to SWD, correct?

They haven't been checked, but probably none of them are. It is a matter of which fruit is more attractive. Most of these fruits won't be as attractive as our larger more succulent ones. You might get SWD in buffaloberry, elderberry and haskaps. Juneberries are too early. In most parts of the state, we don't see them in strawberries yet. So, if the fruit ripens before strawberries, you are probably good.

FINAL NOTES and ANNOUNCEMENTS

- On August 21, Trisha Wagner from Jackson County will host and the special topic will be Butterfly Gardening by Mark Dwyer, Director of the Rotary Gardens in Janesville.
- In St. Croix County, on August 20 we are holding an Urban Tree ID and Selection Course in the morning. Dr. Laura Jull will be coming to teach. We will have an afternoon tree walk at UW-River Falls.
- Lisa: On October 4-6, the Cut Flower Growers will hold a conference in Madison at the Sheraton Hotel. Roy Klehm, Brian, and PJ among others, will be on hand. There will also be a tour. You can find out about it at www.ascfg.org/
- Walt: Ken Schroeder is doing veggie garden walks of home vegetable gardens in Portage County. If anyone is interested, email the extension in Portage County for a schedule.

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: None

Vegetable Crop Update

Vegetable Crop Update Newsletters #26 is available at <http://www.plantpath.wisc.edu/wivegdis/>

Topics in issue #26 (Aug 07, 2015) include:

- Early blight updates
- Late blight DSV accumulations and updates (Polk Co. first report)
- Cucurbit downy mildew updates
- Hop grower workshop agenda/directions
- Langlade Co. Field Day agenda

Please continue to communicate new detections of late blight to me or your county agent. My lab (as well as the UWEX clinic) can offer free diagnostics and genotyping. This information is very useful in better understanding the epidemic for best management.

PDDC UPDATE

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

**Brian Hudelson, Sean Toporek, Catherine Wendt, Claire Wisniewski,
and Ann Joy**

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 8, 2015 through August 14, 2015.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
DECIDUOUS WOODY ORNAMENTALS			
Aspen (Quaking)	Anthracnose	<i>Gloeosporium</i> sp.	Jackson
Elm (Unspecified)	Anthracnose	<i>Gloeosporium</i> sp.	Kewaunee
	Dutch Elm Disease	<i>Ophiostoma</i> sp.	Brown
Hackberry	Island Chlorosis	Uncharacterized virus	Dane
Hickory	Anthracnose	<i>Colletotrichum</i> sp.	Dane
Leatherwood (Eastern)	Verticillium Wilt	<i>Verticillium</i> sp.	Dane
Maple (Red)	Chlorosis	None	Olmstead (MN)
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Olmstead (MN)
Maple (Unspecified)	Purple-Bordered Leaf Spot	<i>Phyllosticta minima</i>	Portage
	Tar Spot	<i>Rhytisma</i> sp.	Portage
Mulberry	Cylindrosporium Leaf Spot	<i>Cylindrosporium</i> sp.	Sauk
Oak (Red)	Anthracnose	<i>Discula</i> sp.	Door
	Chlorosis	None	Door
Oak (Unspecified)	Anthracnose	<i>Discula</i> sp.	Waukesha
	Tubakia Leaf Spot	<i>Tubakia</i> sp.	Waukesha
Rhododendron	Root/Crown Rot	<i>Phytophthora</i> sp., <i>Rhizoctonia</i> sp.	Dane
Serviceberry	Cedar-Apple Rust	<i>Gymnosporangium</i> sp.	Portage
Willow (Curly)	Anthracnose	<i>Discula</i> sp.	Crawford
	Dothiorella Canker	<i>Dothiorella</i> sp.	Crawford

FRUIT CROPS			
Apple	Black Rot	<i>Sphaeropsis</i> sp.	Green
	Fire Blight	<i>Erwinia amylovora</i>	Green
	Root/Crown Rot	<i>Phytophthora</i> sp., <i>Pythium</i> sp.	Sawyer
Apricot	Scab	<i>Cladosporium</i> sp.	Waukesha
Blueberry	Gloeosporium Leaf Spot	<i>Gloeosporium</i> sp.	Eau Claire
	Root/Crown Rot	<i>Phytophthora</i> sp., <i>Pythium</i> sp.	Eau Claire
Cherry	Cherry Leaf Spot	<i>Phloeospora padi</i>	Rock
	Root/Crown Rot	<i>Phytophthora</i> sp.	Sawyer
Pear	Root/Crown Rot	<i>Phytophthora</i> sp.	Sawyer
Plum	Root/Crown Rot	<i>Phytophthora</i> sp.	Sawyer
Raspberry	Cane Blight	<i>Coniothyrium fuckellii</i>	Richland
	Root/Crown Rot	<i>Rhizoctonia</i> sp., <i>Pythium</i> sp., <i>Fusarium</i> sp.	Ozaukee, Richland
HERBACEOUS ORNAMENTALS			
Amaranthus	Root/Crown Rot	<i>Pythium</i> sp.	Waukesha
NEELED WOODY ORNAMENTALS			
Arborvitae	Phyllosticta Needle Blight	<i>Phyllosticta</i> sp.	Milwaukee
Red Cedar	Phomopsis Tip Blight	<i>Phomopsis juniperovora</i>	Ozaukee
Spruce (Black Hills)	Diplodia Shoot Blight and Canker	<i>Diplodia</i> sp.	Eau Claire
	Spruce Needle Drop	<i>Setomelanomma holmii</i>	Eau Claire
Spruce (Blue)	Stigmina Needle Cast	<i>Stigmina</i> sp.	Ozaukee
Spruce (Norway)	Diplodia Shoot Blight and Canker	<i>Diplodia</i> sp.	Waukesha
Yew	Root/Crown Rot	<i>Pythium</i> sp.	Dane
VEGETABLES			
Basil	Downy Mildew	<i>Peronospora belbahrii</i>	Dane
Broccoli	Crown Gall	<i>Agrobacterium tumefaciens</i>	Kenosha
Cucumber	Anthracnose	<i>Colletotrichum orbiculare</i>	Dane
	Powdery Mildew	<i>Oidium</i> sp.	Dane
Garlic	Fusarium Stem Rot	<i>Fusarium oxysporum</i>	Walworth
Onion	Fusarium Basal Rot	<i>Fusarium oxysporum</i>	Marquette
Potato	Late Blight	<i>Phytophthora infestans</i>	Polk
	Powdery Mildew	<i>Oidium</i> sp.	Dane
Tomato	Late Blight	<i>Phytophthora infestans</i>	Polk, St. Croix
	Septoria Leaf Spot	<i>Septoria lycopersici</i>	Rock, Kenosha
	Tobacco Mosaic	<i>Tobacco mosaic virus</i>	Walworth

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