

Wisconsin Horticulture Update Summary, June 20, 2014

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WI WEATHER REVIEW

Unsettled weather with periods of heavy rain prevailed this week, disrupting seasonal fieldwork but increasing soil moisture reserves for summer crops. A powerful line of severe storms moved eastward across southern Wisconsin during the late evening and early morning hours of June 16-17, producing damaging winds and tornadoes southwest of Madison. Torrential rainfall of 1.5-2.0 inches in an hour was observed in several locations. Additional rounds of showers and thunderstorms redeveloped throughout the week as a frontal boundary stalled across the region. Conditions were warm and humid, with afternoon high temperatures mainly in the 80s and lows ranging from the 40s to upper 60s. The repeated rounds of storms and significant rain further increased topsoil moisture supplies which were already 92% adequate or surplus statewide, while the heat and humidity promoted rapid growth of vegetative corn, soybeans and potatoes. Prospects for the state’s crops continue to improve and reports indicate the quality and quantity of the first cutting of alfalfa were the highest in several years.

Growing Degree Days (GDD)

Growing degree days is an accumulation of maximum and minimum temperatures as directly related to insect and plant development. This week, as of June 19, in Wisconsin, the GDDmod 50 ranged from 319 to 766: Appleton-532; Bayfield-319; Beloit-766; Big Flats-618; Crandon-417; Crivitz-444; Cumberland-480; Eau Claire-581; Green Bay-471; Hancock-618; Hartford-561; Juneau-606; LaCrosse-693; Lone Rock-704; Madison-680; Medford-455; Milwaukee-527; Port Edwards-584; Racine-520; Sullivan-561; Waukesha-561; Wausau-483 (WI Pest Bulletin Volume 59 Number 8 June 19 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/>): common lilac, full bloom, 315; 'Pink Princess' weigela, first bloom, 316; blackhaw viburnum, full bloom, 322; redosier dogwood, first bloom, 323; dwarf fothergilla, full bloom, 325; 'Winter King' hawthorn, first bloom, 328; lilac borer, adult emergence, 330; slender deutzia, first bloom, 338; Japanese kerria, full bloom, 342; common horsechestnut, full bloom, 344; red chokeberry, full bloom, 351; doublefile viburnum, first bloom, 353; Pagoda dogwood, first bloom, 363; red Java weigela, first bloom, 365; black cherry, first bloom, 368; common sweetshrub, first bloom, 371; lesser peach tree borer, adult emergence, 372; Ohio buckeye, full bloom, 374; holly leafminer, adult emergence, 375; Vanhoutte spirea, full bloom, 406; euonymus scale (first generation), egg hatch, 406; black cherry, full bloom, 419; Miss Kim Manchurian lilac, first bloom, 422; locust leafminer, adult emergence, 437; doublefile viburnum, full bloom, 444; black locust, first bloom, 467; common ninebark, first bloom, 478; oystershell scale, egg hatch, 497; smokebush, first bloom, 501; catawba rhododendron, full bloom, 503; white fringe tree, full bloom, 517; arrowwood viburnum, first bloom, 534; American yellowwood, first bloom, 546; bronze birch borer, adult emergence, 547; multiflora rose, first bloom, 548; black locust, full bloom, 548; and emerald ash borer, adult emergence, 550. American yellowwood, full bloom, 599; arrowwood viburnum, full bloom, 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.

INTRODUCTION

Today's WHU host was Brown County Horticulture educator Vijai Pandian. Specialists were PDDC director Brian Hudelson and Interim Director of Insect Diagnostic Lab P.J. Liesch. The special guest this week is Mark Renz, UW Weed/Invasive Plant Specialist. Discussion participants were representatives of the following counties: Brown (Vijai Pandian); Kenosha (Barb); St. Croix (Heidi); Portage (Walt); Waukesha (Kristin); Jackson (Trisha); Winnebago (Kim); Racine (Patti); Rock (Christy).

HORTS' SHORTS

This week, county agents reported that deciduous tree and woody ornamental problems dominated questions with dieback.

Brown County-It's been a rainy week, with 1.5 to 2 inches of rain. Tree and woody ornamental questions dominated, running the gamut from Anthracnose on maple and oak, dieback on woody ornamentals, herbicide injury to wilting after leafing out and blooming.

Rock: The weather has been very stormy and wet. Not too many questions because people aren't out, but there were questions on tree dieback. Not as much damage in Rock County as other places in southern Wisconsin.

St. Croix: Two words for the week-Rain and BEARS! 20" of rain has fallen in May and so far in June, with more on the way. Nuisance bears have been raiding apiaries and persistently returning to berry growers. The growers are concerned they may have to fence both the apiaries and the berry fields with electric fences. Insect finds included Colorado potato beetle and cucumber beetle at a field day around Eau Claire. Some unidentified abiotic injuries were also seen.

Waukesha: Questions on Canker diseases, apple tree dieback, lots of weird dieback on trees may be due to both weather and care issues.

Winnebago-Lots of rain, more than Brown. Tree and woody ornamental dieback- a honey locust that just collapsed was posted to the plant doc site. Another sample has been submitted to PDDC. Some vegetable questions were fielded regarding tomatoes, lettuce, and cole crops.

Portage: Possible verticillium wilt on fruit trees and barberry as well as reports of apple and wild cherry trees dying back one branch at a time. Brian has requested half dead/half alive branches, as well as root tissue to make the diagnosis. There was a report of an orange and black striped beetle that has been eating Alyssum and arugula. It has been a week for purple flowers with Siberian iris, vetch and wild lupine are in bloom.

Comment-there has been an article in northeast DNR update about cherry dieback.

Racine: There have been questions about vegetables in the garden not thriving and yellowing out, specifically peppers not growing as well as tomatoes. Also despite it being the middle of June, folks are reporting no leafing out of Japanese maples and we have to give them the sad news about the health of their tree. It is an opportunity to discuss replacements that may be hardier or more appropriate.

Jackson: We are hearing about the same topics, especially tree dieback. There has been some short-lived flooding in vegetable gardens and the ground is saturated. We could use a break in the rain.

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

It has been busy in the Insect Diagnostic Lab. Some of the submissions this week included wasp/hornet nests, more spiders, ichneumon wasps, and caterpillars, few cases of slugs. There were also some other reports.

Bald-faced Hornets

Folks were wondering how to manage a bald-faced hornet that started nesting in the garage overhang. If the nest is in a high traffic area, the best strategy is to remove it when it is small and there aren't very many nest residents or workers defending the nest. Try to sneak out at night when everyone is inside to prevent any stings. If the nest is small, completely bag the nest, sever the small tassel which attaches to the structure, then dispose of the nest. <http://ento.psu.edu/extension/factsheets/baldfaced-hornet>

Caterpillars

Pictures of white-lined sphinx moth caterpillars and caterpillars of nymphalid butterflies, like mourning cloak butterflies, were submitted. These caterpillars are very distinct because they sport medieval looking spines. http://www4.uwm.edu/fieldstation/naturalhistory/bugoftheweek/white_lined_sphinx_moth.cfm
http://animaldiversity.ummz.umich.edu/accounts/Nymphalis_antiope/

Strawberry Root Weevil

These are small black insects, sometimes confused with ticks, that may even wander into the house. They are harmless. They can just be vacuumed up, but it is wise to find their ingress and plug it up. <http://www.fruit.cornell.edu/berry/ipm/ipmpdfs/Root%20weevil%20bio%20mgmt.pdf>

Squash Vine Borer Here Shortly

This is a heads up: when growing degree days likely reach 900-1000 at the end of June- beginning of July, the female squash vine borer will be ready to lay eggs for a period of about three weeks. Eggs are laid only at the base of the stem close to the soil, so that is where control measures should be taken. http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Squash_Vine_Borer.pdf

Questions

How do you control squash vine borer? What really works the best?

The whole plant need not be treated, only the base of the vine where the female lays eggs and only for the three weeks of egg laying. Many garden products will work.

Can barrier methods like aluminum foil on the stem base or floating row covers be used?

P.J. has not seen research that shows efficacy of floating row covers, but theoretically it should work as long as the plant is completely covered up and the insect is excluded. If flowers are out, that would have to be taken into consideration. He has seen no scientific research on whether aluminum foil at the base of the stem works so doesn't know whether it is effective.

What specific products can be used, especially ones that are safer for bees?

Sevin, or any garden products that are labeled for the insect such as pyrethroids, are effective on the base of the stem. Keep in mind that bees will be visiting the flowers. The flowers are far enough from the base of the stem which is being treated at the soil line so the bees shouldn't be affected. You could put up a cardboard shield to prevent insecticide drift to flowers.

SPECIALIST REPORT: Plant Diagnostic Disease Clinic

Presented by Brian Hudelson, Sr. Outreach Specialist, UW-Plant Pathology, and Director of the UW-Extension Plant Disease Diagnostics Clinic (PDDC) bdh@plantpath.wisc.edu

The PDDC update is attached to the end of this summary.

Lots of dieback on woody ornamentals seen this week on boxwood, lilac and stewartia likely due to winter injury. Canker organisms are also present in the branches which maybe a contributing factor. Those may be colonizing opportunistically after the dieback. There was another case of downy mildew on basil. Below are new diseases seen this week.

Diagnosis was finished on many samples this week, but in general sample submission has been a little slow. Please send in samples to keep the students busy learning plant pathogens instead of how to use the shredder.

Venturia on Aspen

An aspen sample came in with black tips on the shoots and a shepherd's crook similar to fire blight. The diagnosis was Venturia blight, which is a fungal disease in the same genus as apple scab, that causes blackening of foliage. Although Venturia is the organism for the sexual stage of the disease, the asexual form (*Fusacladium radiosum* var. *lethiferum*) was identified in the lab.

<http://missoulaeduplace.org/venturiashootblight.html>

Impatiens Necrotic Spot Virus (INSV) on Hoya

This submission came from a greenhouse. INSV is transmitted by thrips, so thrip control is critical to prevent infection. The greenhouse has had problems in the past with this virus.

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

Possible Virus on Peony

The symptoms were distorted, yellow growth with yellow flecking consistent with a viral disease. It may be Tobacco Rattle Virus (TRV), but we don't have the capacity to test for that virus. TRV is fairly common on peony.

Virus on Garlic

A garlic sample came in that had copious yellow streaking with a mosaic pattern on foliage. This has been seen before and has been attributed to a virus, but the virus is unidentified..

Fire Blight on Apple

Another diagnosis of fireblight on an apple sample was confirmed. This sample also had winter injury dieback.

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

Bacterial Canker on Tomato

A tomato sample came in that showed a lot of decay at the soil line and was diagnosed with bacterial canker disease. This disease can infect the seeds with transmission to plants. As the plant grows and favorable conditions are met, the bacteria population gets high enough to infect and kill the plant.

http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-VG-6.pdf

Phyllosticta on Arborvitae

An arborvitae sample was submitted that had many brown tips. It is usually attributed to winter injury, but Phyllosticta fungus was found on the twigs and probably was contributing to the dieback. To confirm this diagnosis, a microscopic examination must be done on the sample.

Questions

With all the rain, disease expectations are high. Do you have any general advice on controlling disease?

It really depends on the situation. Leaf disease expectations are high, but things like anthracnose infection on maple, apple scab, or cedar apple rust, were established much earlier and control on woody ornamentals at this

point is too late and unlikely. For something like late blight in the vegetable garden, you could do some preventative treatments of copper or chlorothalonil.

Rhubarb with dieback was seen where the crown was completely rotted out in older plants.

We did talk about a rhubarb sample last week that may have had crown rot, which is common on that host. So much rain is conducive to growth of root rots, especially in situations of poor drainage like pots without drainage holes. We started work on a dying petunia from which we have already identified resting spores of pythium. Other soil fungal diseases appear to be involved as well. Herbaceous plants in poorly drained spots are susceptible to root rot diseases.

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

SPECIAL TOPIC: Weed/Invasive Plant Update

Presented by Mark Renz, Weed Science/Invasive Species Specialist, UW-Madison Extension (Dept. of Agronomy)

Introduction of Mark

Mark is a guru on weed/invasive species ID and the author of numerous publications and youtube videos that are hosted on our website hort.uwex.edu/ and on his weed science website (<http://fyi.uwex.edu/weedsci/>). He was a pioneer weed specialist who will launch the Wisconsin First Detector Network.

Mark provided 2 powerpoint presentations to go along with his talk today. The first page in the powerpoint shows a picture he took this spring of a small 1 m² patch of ground that contains at least six invasive species, including wild parsnip, plumeless thistle, crown vetch, garlic mustard, showing the diversity of weeds. He also put in a plug for the weed science website which contains a wealth of information. The best way to get in touch with him is by eMail. Even though he is in agronomy, Mark is a default horticultural weed scientist and will try his best to help out. They are working on a disease of lamb's quarters that appears to be an insect feeding issue. There is a picture of the female.

First Detector Network

He has launched the First Detector Network to get citizen scientists involved in monitoring and reporting invasive species across all taxa. On-line training started this winter, and they are following up with field training this summer. There is one in Rock County this Tuesday (June 24) with Christy (10 am-12 pm in Beloit) and one in Waukesha County with Kristin this Thursday (June 26). They will be talking about the Cerceris survey, hoping to detect EAB and other invasive insects and how to use the invasive species smartphone application to report invasive species. It is for First Detectors but anyone can join and it is free of charge. Send an eMail if you would like to come. In late July, there will be event in Door County for EAB; on August 1, they will be in Newburg for EAB; later in August they will be in Superior. There are lots of training opportunities coming up-stay tuned for postings. If there is a group of volunteers that needs training, let him know and he can put you in touch to get it scheduled for personalized training. Tony Summers is in charge of the First Detector Network.

For questions please contact the WIFDN project coordinator, Tony Summers (asummers2@wisc.edu; 608-262-9570) or Mark Renz (mrenz@wisc.edu; 608-263-7437).

Weed Update

The newest invasive depends on the region. In Chippewa and Dunn counties, the newest invasive is Wild Chervil. It is flowering now and has small white flowers. There is a Youtube video describing it on the weed website. In the north, garden valerian and Eurasian marsh thistle are an issue. In the south, phragmites, garlic mustard, and crown vetch are still spreading.

Invasive Rule NR 40

The invasive species rule, NR 40, was adopted in 2009. The rule covers a broad spectrum of invasive species and categorizes them as prohibited, restricted, split listed, and caution. Well over 60 plants are in the restricted or prohibited categories. In the current list, many will be recognized in the restricted category. These are plants which are already widespread. The plants in the prohibited list may not be recognized because there is either none in the state or only a small population exists which is still possible to control. Some plants are split-listed depending on

the area. After five years, NR 40 is now in the process of being updated. Even though the law has been on the books, the DNR is still in the process of education as to the existence of the law, so there is no enforcement.

Restricted species: You can possess them, but they can't be transferred, transported or introduced. The rule encourages control of the species.

Prohibited species: You may not possess, transfer, transport, or introduce the organism. The rule requires control of prohibited species.

Proposed revision: Delist two species of insects or animals; list 85 species of plants, insects, and animals, with 51 prohibited, 32 restricted, and two split-listed.

New Prohibited Species of Barberry and Burning Bush

Two proposed restricted species are barberry and burning bush. There are areas that are being invaded, especially forested areas. Burning bush seems to be confined to the southern part of the state. The restricted species are specific, older varieties that set viable seed prodigiously. Newer varieties are not being restricted and the horticultural industry is working very hard to breed sterile varieties. It is likely that those will show up sometime but are not yet available.

Comment Period for Rule Update

DNR is concerned about economic impact and is giving the nursery industry 3 years to liquidate their current stock. There is a comment period through the end of June for people to express their opinion of the rule. The contact information is:

Terrell Hyde; DNR - Bureau of Natural Heritage Cons.

101 S. Webster St, Madison, WI 53707-7921

Fax: 608-266-2925

E-mail: DNRInvasiveSpecies@wisconsin.gov

Or online: at <https://health.wisconsin.gov/admrules/public/Home>

The DNR board and governor will be acting on it in the fall.

Alternatives to Prohibited Species

There has been a collaborative effort with several groups to educate folks to make better choices. The Midwest Invasive Plant Network (of which Mark is president) has produced a landscape alternatives brochure which lists other species or varieties, native and non-native, that can be planted. It is only effective if people have the information with them while they are shopping. A brochure is easily forgotten, but phones are not, so a free smart phone app for both Android and Apple is available to help people when they make their purchases. Information is on the powerpoint which tells how to download the app. Through education, we are trying to be proactive in preventing the release of invasive ornamentals into our natural areas, even if barberry is out of the bag. Most non-native plants, greater than 90%, are not invasive. It is only a small percentage that causes problems so we want to target control efforts on those species.

Monitoring Invasive Plants

We have tried to do this with specialists, botanists, and staff members but we do not have the resources to monitor everywhere so we must encourage citizen scientists, ordinary citizens, and Master Gardeners to help us monitor invasive plants to improve understanding of the distribution. As an example, a chance encounter with a farmer in Chippewa county led us to the biggest patch of wild chervil and we didn't even know it was there. We recognize how helpful local people can be, so we are trying to make it easy to report findings. The Great Lakes Early Detection Network (www.gledn.org/) is an organization dedicated to this input. To help us monitor invasives, we are asking that people use the on-line submission form or the smart phone app from the GLEDN website. The on-line version is useful but it can be time consuming since you have to take a picture, access the site, download the picture and give the location to make the submission. In order to make it easier, we are trying to promote the free smart phone app (<http://apps.bugwood.org/mobile/gledn.html>) for reporting observations. It is available for Android or Apple products. When you are out and about, it takes less than 30 seconds to pull up the app, snap a picture and make the submission. It is so helpful for us to be able to monitor the spread of new invasives using this input.

We are having some webinar training for the smart phone app and its new features on Monday June 22, from 11:30 to 12:30. It will be sent out to the hort list. It will be recorded so you can have access to the training even if you can't attend.

Here is a link to the webinar recording from the MIPN website:

<https://gomeet.itap.purdue.edu/p19q6mlc5wa/?launcher=false&fcsContent=true&pbMode=normal>

On the powerpoint, you can see the benefit of this input. It shows a map we produced about a year ago of how the spread of wild parsnip has progressed. Anyone in the state can see if the invasive is in their area, even if they haven't seen it themselves. We would like to increase and enhance our ability to map these plants.

Questions/Comments

Will there be any First Detector training in the central part of the state? I would like to push it with Master Gardeners.

We currently don't, but it certainly can be arranged if there is interest. Send Mark an eMail so he can put anyone in touch with the right people to get it scheduled.

Japanese barberry, as well as honeysuckle, is all over the King Home area(in Waupaca).

Yes, it will probably be the next multi-flora rose as so much was planted in the landscape. Japanese barberry is a very good host for ticks which carry Lyme disease, so there is a lot of motivation to control it.

Is the information for the smart phone app in the brochure?

No, it is currently not in the brochure, because the brochure is old. We will be updating the brochure and it will be included in the updated brochure.

Is there any progress in getting roadside weeds controlled?

We are working with the DOT, which does have some funds for weed control. Report any invasives on the roads managed by the DOT (that is numbered roads, but not county roads which are managed by municipalities) and if it is a prohibited species, it must be controlled by law. Report it through GLEDN or tell Mark and he will get the info to the DOT. I have personal experience of reporting a prohibited species and within a week it had been treated. If it is a restricted species and control is not required, budget cuts have decreased funding so nothing may be done or only one mowing is done. The major issue we have seen is that if only one mowing is done, it may not be at the optimum time, so instead of controlling the invasive they are actually spreading it.

If a private landowner has prohibited species, does the DNR have funds for controlling?

Yes, landowners are required to control prohibited species. If the landowner can't or won't control the problem, the DNR is allowed to take necessary measures and send a bill. It is written into the rule that they will try to help with expenses if the landowner can't afford it, but it is the landowner's responsibility. There has not been enforcement yet for invasive terrestrial plants. In the aquatic arena, DNR feels that they have given enough information and enough time for people to know about spreading aquatic invasives, so they have done some enforcement.

If a private landowner has a prohibited species, can we talk to the Weed Commissioner to force clean-up?

If a community has a weed commissioner, that would be a good way to go. Currently the DNR is enforcing the rule through the game wardens; no more staff has been hired to enforce the rule. If the weed commissioner worked with the DNR, would help disseminate and promote the rule. One option to involve the weed commissioner is to have the community ordinance state that any prohibited species from the NR40 rule is also considered a noxious weed. That way, the weed commissioner would have the authority to require control. Weed commissioner have jurisdiction over noxious weeds.

FINAL NOTES

Once again, there is a written summary being prepared for the update. Written summaries for the updates of June 06 and June 13 are on the website.

Someone from Oneida county sent in a picture of a fringed polygala seen in the upper peninsula. No disease, it is just a beautiful flower that looks like a little bird with a tuft of stamens on top.

<http://blog.press.princeton.edu/2013/05/15/wildflower-wednesday-fringed-polygala/>

The next meeting is June 27. Barb Larson from Kenosha will be hosting and Tom Germann will be presenting a talk on plant viruses.

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

Topics covered in the issue include:

Insecticide/Nematicide update - Vydate L for dry bulb onion thrips and stubby root nematodes

Late blight updates

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

Crop diagnostic training workshops advertisement - Dan Heider

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 June 14, 2014 through June 20, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Aspen	Venturia Leaf and Shoot Blight	<i>Fusacladium radiosum</i> var. <i>lethiferum</i>	Dane
Boxwood	Volutella Blight	<i>Volutella</i> sp.	Milwaukee
	Winter Injury	None	Milwaukee
Lilac	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Dane
Stewartia	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
	Winter Injury	None	Dane
FRUIT CROPS			
Apple	Fire Blight	<i>Erwinia amylovora</i>	Chippewa
	Root Rot	<i>Pythium</i> sp., <i>Fusarium</i> sp.	Chippewa
HERBACEOUS ORNAMENTALS			
Hoya	Impatiens Necrotic Spot	<i>Impatiens necrotic spot virus</i>	Dane
	Phyllosticta Leaf Spot/ Blight	<i>Phyllosticta</i> sp.	Dane
Peony	Uncharacterized Viral Disease	Unidentified plant virus	La Crosse
NEEDED WOODY ORNAMENTALS			
Arborvitae	Phyllosticta Needle Blight	<i>Phyllosticta</i> sp.	Dane
Fir (Concolor)	Root Rot	<i>Pythium</i> sp., <i>Fusarium</i> sp.	Marathon
VEGETABLES			
Basil	Downy Mildew	<i>Peronospora belbahrii</i>	Dane
Garlic	Uncharacterized Viral Disease	Unidentified plant virus	Waukesha
Tomato	Bacterial Canker	<i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i>	Monroe

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