

# Wisconsin Horticulture Update Summary, May 15, 2015

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## Table of Contents

<b>WI WEATHER REVIEW</b> .....	<b>2</b>
<i>Growing degree days (GDD)</i> .....	2
<b>WI CROP PROGRESS AND CONDITION</b> .....	<b>2</b>
<b>INTRODUCTION</b> .....	<b>3</b>
<b>HORTS' SHORTS</b> .....	<b>3</b>
<b>SPECIALIST REPORT: Insect Diagnostic Lab Update</b> .....	<b>3</b>
<i>Mosquitos</i> .....	3
<i>Ticks</i> .....	3
<i>Emerald ash borer</i> .....	3
<i>Spring caterpillars</i> .....	3
<i>Lily leaf beetle</i> .....	3
<i>Questions</i> .....	4
<b>SPECIALIST REPORT: Plant Diagnostic Disease Clinic</b> .....	<b>4</b>
<i>Bacterial blight on lilac</i> .....	4
<i>Edema and grey mold on geranium</i> .....	4
<i>Volutella blight on pachysandra</i> .....	4
<i>Questions</i> .....	4
<i>Spring anthracnose predictions</i> .....	4
<i>Cedar-apple rust</i> .....	4
<b>SPECIAL TOPIC: Vegetable Update</b> .....	<b>5</b>
<i>Website Upgrades</i> .....	5
<i>Disorders</i> .....	5
<i>Yellow, flagging leaves on tomato</i> .....	5
<i>Edema</i> .....	5
<i>Early season damping off and root rot</i> .....	6
<i>Questions/Comments</i> .....	6
<i>Late blight predictions for 2015</i> .....	6
<i>Late blight resistant tomatoes</i> .....	6
<i>Cornell website with resistant varieties</i> .....	6
<i>Black rot on crucifers</i> .....	6
<i>White mold on tomatoes</i> .....	7
<i>Grafted plants and late blight resistance</i> .....	7
<b>FINAL NOTES and ANNOUNCEMENTS</b> .....	<b>7</b>
<b>UW LINKS</b> .....	<b>8</b>
<b>WHU "OFF THE AIR"</b> .....	<b>9</b>
<b>VEGETABLE CROP UPDATE</b> .....	<b>9</b>
<b>PDDC UPDATE</b> .....	<b>9</b>

## WI WEATHER REVIEW

Cool, showery conditions throughout the state delayed completion of spring tillage and interrupted planting activities. An early-week low pressure system and its associated cold front brought scattered light rain and below-normal temperatures, slowing crop growth rates and threatening plants with a late spring freeze. Temperatures on May 12-13 fell below freezing in many locations across Wisconsin, though the frost that developed during the early morning hours was brief and did not significantly impact emerging crops. Meanwhile, occasional showers reduced lingering soil moisture deficits and sustained favorable prospects for vegetative winter wheat and recently-planted corn and soybeans. With the planting of corn over 69% complete, many Wisconsin growers have moved on to soybean planting, which was 25% percent complete as of May 10. Milder conditions returned for the latter half of the week and a few days of drier weather allowed corn and soybean planting to continue. (Issue No.4 of Wisconsin Pest Bulletin)

Average soil temperatures at 2" as of May 15, 2015: Hancock 58.9, Arlington 63.2.  
([http://agwx.soils.wisc.edu/uwex\\_agwx/awon/awon\\_seven\\_day](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<sub>mod50</sub> in Wisconsin ranged from 208 to 436. Following is a list of DD as of May 17, 2015 for the following cities: Appleton-303; Bayfield-208; Beloit-436; Big Flats-384; Cumberland-312; Crandall-248; Crivitz-224; Eau Claire-366; Fond du Lac-295; Green Bay-243; Hancock-384; Hartfield-290; Juneau-343; LaCrosse-441; Lone Rock-427; Madison-407; Medford-289; Milwaukee-247; Port Edwards-366; Racine-245; Sullivan-290; Waukesha-290; Wausau-299. 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](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 the events occur (Ohio State BYGL): regent serviceberry, first bloom, 186; Japanese flowering crabapple, first bloom, 189; eastern redbud, first bloom, 191; **gypsy moth, egg hatch, 192**; Koreanspice viburnum, full bloom, 205; **azalea lace bug, egg hatch, 206**; 'Spring Snow' crabapple, full bloom, 209; common flowering quince, full bloom, 214; **birch leafminer, adult emergence, 215**; 'Coralburst' crabapple, first bloom, 217; **elm leafminer, adult emergence, 219**; common chokecherry, full bloom, 221; **alder leafminer, adult emergence, 224**; **honeylocust plant bug, egg hatch, 230**; sargent crabapple, first bloom, 230; common lilac, first bloom, 234; Ohio buckeye, first bloom, 245; common horsechestnut, first bloom, 251; **hawthorn lace bug, adult emergence, 253**; **hawthorn leafminer, adult emergence, 260**; flowering dogwood, first bloom, 263; red buckeye, first bloom, 265; blackhaw viburnum, first bloom, 269; **imported willow leaf beetle, adult emergence, 274**; Sargent crabapple, full bloom, 298; red horsechestnut, first bloom, 304; **pine needle scale, egg hatch - 1st generation, 305**; **cooley spruce gall adelgid, egg hatch, 308**; **eastern spruce gall adelgid, egg hatch, 308**; 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**; and smokebush, first bloom, 501.

## WI CROP PROGRESS AND CONDITION

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

## INTRODUCTION

The host for today's WHU was Lisa Johnson from Dane County, PDDC Director Brian Hudelson was the specialist participant. Amanda Gevens, UW Madison Department of Plant Pathology was the special guest giving a vegetable update. Participants in today's discussions were representatives from the following counties: Columbia (George Koepp), Dane (Lisa Johnson), Eau Claire (Erin LaFaive), Marquette (Kristin Krokowski), Rock (Christy Marsden), Pierce (Diane Alfuth), Racine (Patti Nagai), Walworth (Chrissy Wen), Winnebago (Kim Miller).

## HORTS' SHORTS

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

Dane: Daffodils are fading, saucer magnolias are done, lilacs are in full bloom to end bloom. Dandelions are starting to seed. Questions have ranged from whether ash trees can still be treated for EAB to questions on rhubarb and frost.

Eau Claire: Lilacs are in full bloom and dandelions are seeding. We have had lots of rain. The forecasted warm temperatures with rain are pushing growth. We have had questions about weeds.

Columbia County: We are similar to Dane. We have had some rain, but only enough to dampen the surface. Things are still looking good.

Pierce: People are out morel hunting. Elderberries and azaleas are blooming. We have had questions on lawns, soil testing and soil amendments.

Winnebago: We had a little rain, but not enough. Things are growing well. Questions have been all over with no real pattern. I have nothing different to add regarding blooming plants.

Walworth: Evergreens are flushing out, vinca, phlox, mustards and honeysuckles are blooming. We had an oriole sighting. Mosquitos, ticks, and ants are out.

Racine: Our weather this week has been wet and warm. Dandelions are seeding and crabapples are in full bloom. It has been very green and floriferous this spring despite the roller coaster temperatures. We haven't had a lot of questions but the few we had were mostly about lawn care and controlling invasive species.

## SPECIALIST REPORT: Insect Diagnostic Lab Update

*Presented by P. J. Liesch, Assistant Faculty Associate, UW-Madison Department of Entomology, and Manager of the UW-Extension Insect Diagnostic Lab [pliesch@wisc.edu](mailto:pliesch@wisc.edu)*

Relayed by Brian from PJ:

- 1) Mosquitoes: I'm expecting our first decent batch of mosquitoes should be coming out over the next week or two.
- 2) Ticks: ticks remain active across much of the state, so thorough tick checks are needed anytime you come in from outdoors. Don't forget to check four-legged family members as well. Repellents (DEET and permethrin) will help prevent ticks.
- 3) Emerald Ash Borer: although we're getting a little past the ideal timing, there's still a bit of time to treat ash trees in home yards.
- 4) Spring Caterpillars: gypsy moth and eastern tent caterpillar are out-and-about, so it's that time of the year to keep an eye out for them.
- 5) Lily Leaf Beetle: for those in central Wisconsin, lily leaf beetle is already active, so keep an eye out for bright red, 1/4" long beetles on true lily flowers in your yards.

## Questions

PJ was absent, so no questions for him 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](mailto:bdh@plantpath.wisc.edu)

There was nothing very novel this week: Japanese maple with verticillium, pachysandra with volutella, juniper with kabatina and rhizosphaera on spruces. New ones for this week were bacterial blight on lilac and edema and grey mold on geranium.

### Bacterial blight on lilac

This organism can cause tip dieback and very dark, almost black leaf tips. The bacterium can be problematic because it is present on leaf surfaces as part of the normal epiflora on the leaves. Levels are not usually high enough to cause disease. When it does get to high enough populations, it will cause disease. It serves as an ice nucleator, though and makes tissue more susceptible to cold injury which can occur at a higher than normal temperature than would occur if the bacterium was not present at high levels. The bacterium has a protein in an outer membrane that mimics an ice crystal which leads to the cold injury.

### Edema and grey mold on geranium

Amanda mentioned vegetables with edema and we had a geranium sample with edema.

We also had geranium with grey mold, a fungal pathogen that is active in stressed plants in moist conditions. It is not uncommon on greenhouse crops. The symptoms are wedge-shaped necrotic areas, similar to bacterial blight. Our tests were negative for bacterial blight, but we were able to diagnose this fungus which is a botrytis species.

### Volutella blight on pachysandra

We have received samples of pachysandra infected with Volutella blight. This is a bona fide pathogen that attacks stressed plants. Environmental conditions such as poor snow cover, dry conditions in the fall causing water stress, planting near a sidewalk where salt can get washed into the root zone, or frost injury can predispose the plant to infection. It can cause widespread defoliation leading to aesthetic problems. It is not typically a tabled disease.

## Questions

### Spring anthracnose predictions

*Are you expecting to see much anthracnose this spring?*

If we get rain as the leaves emerge, anthracnose can occur. That group of fungi are common in the environment. The symptoms are random brown necrotic areas. White oak can have severe infections; maple and ash are frequent hosts, but it can affect lots of plants. Anthracnose is a catch-all name for fungal leaf disease by a broad group of fungi that produce acervulus fruiting bodies.

### Cedar-apple rust

*It has been dry here, except the last week, in Pierce County, but has the window for cedar-apple rust passed? Our apples and crabapples are in full bloom and leaves are out, but I haven't seen the gelatinous orange blobs.*

I am just seeing the tips of the gelatinous arms in Madison. We are just getting into the fruiting stage. I think you are 1 to 2 weeks behind us, so it may be a little early for Pierce County.

*Based on the phenology I have been hearing, we aren't too far behind Madison. Spring progresses from west to east and north to south and the western edge of our county is at a similar stage as Madison. We had rain all day and night so conditions may be right.*

Fruiting tends to occur whether it is wet or dry, but the spores may not survive if has been particularly dry. Infection depends on whether the spores can survive to infect the apples, crabapples and hawthorns.

*Is there a limit to how mature the leaves are for infection to occur? Is infection less likely on more mature leaves?*

I don't know for certain whether that is true for cedar apple rust. For many fungal diseases, younger tissue is more susceptible to infection. Once the leaf tissue ages, infection is less likely. You can monitor for the brown galls on red cedar. That is where the fruiting bodies start. I do think it is a little early for you.

*In Walworth County, we received pictures of the orange galls two weeks ago. (Chrissy will send Brian, Diana, and anyone else who wants them, the pictures and will post them on the Wisconsin Garden facebook page.)*

Last week, I saw the initiation of the orange galls (on cedar), but no active fruiting. It is a cosmetic disease. Around July 1 you should see the colorful spots on the alternate host.

## SPECIAL TOPIC: Vegetable Update

*Presented by Amanda Gevens, UW Madison/Extension Department of Plant Pathology*

There aren't a lot of vegetable questions coming right now because people are just starting to set out their transplants, especially the temperature sensitive ones. I did want to review some of the information resources we have, as well as some new ones available this year.

### Website Upgrades

Our website is: <http://www.plantpath.wisc.edu/wivegdis/>

We have added information to existing tabs and we continue to add tabs for FAQ for key crops for both residential and commercial growers and hopefully these groups can learn from each other.

1. We have a tab for the Vegetable Crop Newsletter that comes out weekly by eMail, usually on Fridays. County agents can digest the information and add specific information for their counties. All the newsletters from the past 6 years are archived there to make comparisons. The newsletter also gives the early and late blight forecast for both potato and tomato. Issue #3, April 10, 2015 gives a little tutorial on what the numbers mean and how to use them if you are new to using the information.
2. Hops are not a traditional crop that fits easily into other categories, so we have taken that on. There is a tab for Hops which includes an A-series of fact sheets that discusses hops viruses, downy mildew, and blights. Some hops growing information can be found under that tab.
3. There is a tab for Fact Sheets. There is a separate A-series for late blight on tomato. The fact sheet tab also has an X-series fact sheet with a table on home garden fungicides categorized by crop group, disease, and commonly available fungicides such as Bonide or Dragon Dust. The list can change in time and we are probably due to update it, but the information is still valuable for home gardeners in terms of preventative or control treatments.

### Disorders

At this time of year, we can see disorders on transplants coming out of greenhouses. This health issues may not be diseases.

#### Yellowing, flagging leaves on tomato

If a pathogen can't be found for the symptoms of yellowing, flagging of top leaves, curling or downward cupping leaves on tomato, they may be caused by too large of a temperature fluctuation between day and night. This sometimes happens if it has been warm during the day, but the temperature dips to freezing or near freezing at night. The greenhouse is heated to maintain the warmth causing an accumulation of ethylene. The plant then responds to this gas buildup.

#### Edema

Edema is an overgrowth of cells that look like bumps or warts. It is commonly seen on tomatoes or cole crops. It is caused by cooler night temperatures with wet soil conditions. Plants are more susceptible if days are also cool and

there is no drying out. No treatment is called for and the plants usually outgrow the condition once they are brought outside. It can be ugly for a while.

#### Early season damping off and root rot

Rhizoctonia, pythium, and fusarium are weaker pathogens and slow feeders on the roots. However, if a plant is not growing quickly due to cool, wet conditions, these pathogens can invade. The symptoms are wilting plants that tip over at the soil line. Sometimes the plant does not even emerge from the soil, but dies under the surface.

## Questions/Comments

#### Late blight predictions for 2015

*Do you have any predictions about late blight and what races we can expect to see?*

Race US 23 predominated last year and has already been seen this year in tomatoes in southern states. An older race, US 8, was also found last year in three Wisconsin counties, so there is a chance that both would reappear this year. Late blight typically occurs in mid-August since that is when weather conditions are favorable. It is hard to know where inoculum may initiate in any given year, whether tomato or potato.

#### Late blight resistant tomatoes

*If someone wanted to grow a late blight resistant tomato, should they target resistance to races US 23 and US 8?*

Resistant tomatoes now available are holding up well against race US 23. Some varieties that hold up well against late blight are 'Mountain Magic', 'Iron Lady' which is also resistant to septoria and alternaria, 'Plum Regal', and 'Defiant'. We are finding that some older varieties, such as 'Legend', that had resistance to PH1 alone or PH2 alone are not resistant to the newer races. I haven't relooked at the newer US 8 race on current late blight resistant tomatoes, but I would expect that some of the newer varieties with multiple PH genes would hold up well.

#### Cornell website with resistant varieties

*Do you have a link to the Cornell website which lists the resistant varieties and their resistance profiles?*

I did send you that link and have it on the vegetable pathology facebook page, but need to put it on the vegetable pathology website. This publication was written by Meg McGrath for eOrganic and is a very readable and accessible document. She did a lovely job of summarizing the status of late blight. There are good tables with listings of all the PH genes and to which races the genes are resistant, as well as resistant tomatoes now available.

<http://www.extension.org/pages/72678/late-blight-management-in-tomato-with-resistant-varieties#.VVvV7bVikp>

Note that Brian will put the link on the WHU website as well.

#### Black rot on crucifers

*We have seen an upswing of black rot on crucifers. Do you expect that to continue?*

I do. Black rot is a bacterial disease of crucifers caused by Xanthomonas and has been on a continual uptick since 2010 when there was a lot of flooding in the state. The pathogen can be soilborne but it is not that good of a soil pathogen since it will only persist in the soil for about two years before declining. For smaller farms, problems arise when rotations are short or there is inadequate spacing between croppings and there is no chance for the bacterium to languish. However, we are also seeing the inoculum coming in on seed, particularly from the northwest. It is not only in Wisconsin. Any state with varied crucifer, or concentrated cabbage or sauerkraut production is seeing an increase so it does point to the seed. Once the disease occurs, it is difficult to manage. The only treatment for it is copper, which is a bactericide. Copper will help limit plant to plant spread within field during production, but it can cause some phytotoxicity on the plant. The best strategy is to use hot water treated seed or get healthy transplants or transplants that were generated from hot water treated seed. Start with clean material, plant in well-drained soil and make sure to reduce stand density of kale or cabbage. If you are direct seeding, hoe to thin the stand to maintain adequate spacing so the air flow can dry the lower canopy. Anytime there is a water film, the pathogen is quite active. Another strategy on multipick crops like lacinato kale is to remove any lower growth that may be showing symptoms. This increases air flow and reduces inoculum for new growth. That way, some harvest is possible even if the disease is present.

The symptoms of black rot are yellowing of the leaves at the edge where a leaf opening is, progressing to a wedge or V-shape as the disease moves toward the petiole. The tissue then becomes necrotic.

*There is a fact sheet about black rot which mentions the hot water treatment with timing for the treatment.*  
[http://labs.russell.wisc.edu/pddc/files/Fact\\_Sheets/FC\\_PDF/Black\\_Rot\\_of\\_Crucifers.pdf](http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Black_Rot_of_Crucifers.pdf)

### White mold on tomatoes

*We received a sample of hoophouse tomato infected with white mold. It was a situation of the grower producing tomatoes in the same spot for several years. Have you seen much of that?*

It is quite spotty around the state. Anywhere a high tunnel or hoophouse was put over ground that was in beans for 30 years prior and the white mold was already there. In other cases, it may have been introduced in transplant material or soil containing the sclerotia. The white mold, or timber rot in tomato, is caused by *Sclerotinia sclerotiorum*. The pathogen has a very broad host range, even though I talked about bean as the pathogen reservoir. This disease infects 80 different plant families including onion, cucurbits, tomato, carrot, peppers, and sunflowers. In tomatoes, the disease typically strikes in late July in tunnels where soil moisture persists. Early symptoms are flagging of the flowers or blooms and as the fruit forms you may see white cottony mycelial growth. If you open up fruit you may see hard black sclerotia in the tissue. In tomatoes grown in high tunnels, we also often see infections on the lower stem which move up and cause wilting and failure to thrive. You often see the sclerotia in the infected stem tissue.

The treatment can be challenging because the pathogen has persistent soil structures. The best management may be to push out the soil in the high tunnels if the disease is spotty. There are some chemical treatments and we have been working with a biological called Contends. This is a soil borne fungus which infects the sclerotia. It is a long term approach because it doesn't have an immediate effect at reducing the pathogen population. Fumigation is also an option although not for a home gardener. The main treatment is to keep it out of the field or hoophouse.

### Grafted plants and late blight resistance

*For grafted tomato plants, is the late blight resistance in rootstock conferred to the upper part of the plant?*

Grafted rootstock is resistant to soilborne pathogens such as verticillium, fusarium, and nematodes. In southern states, nematodes are a big problem so they use a lot of grafted plants with resistant rootstock and more desirable fruiting stock. Late blight does not affect roots so there is no benefit for resistance in rootstock (except in potato tubers).

*I heard of a grafted variety call 'Ketchup and Fries' which has potato rootstock and tomato fruit stock. Is it supposed to be resistant in any way? Are there graft incompatibilities? Is it just a gimmicky market thing?*

I have heard of the plant but don't know if it has any resistance. I thought it was clever but didn't spend much time on it. It is probably a novelty, but I don't know much about the two varieties used.

## FINAL NOTES and ANNOUNCEMENTS

Next week, the host will be Christy Marsden from Rock County and the special topic will be a fruit insect update by Christelle Guedot from the UW-Madison Department of Entomology.

**Patti:** Kudos to Brian for a very impactful diagnostic session on May 14. I had many appreciative comments from master gardeners. Thanks to Chrissy for hosting.

**Brian Hudleston:** There will be two sessions on answering horticultural questions in May. These sessions are for anyone who answers questions at county offices such as agents, plant health advisors, or master gardeners. P.J. Leisch will give a presentation on insects, Mark Renz will give an update on weeds and invasives, and either Paul Koch or Bruce Schweiger will give information on turf and I will give an update on diseases. If you would like to attend either session, let me know and I will get you on the list. There is a posting on the Wisconsin Horticulture Update for those sessions.

May 27 in Marathon County Extension in Wausau 8:45 am to 4:45 pm. Plenty of space available here.

We have the updated diagnostic center and resource brochure. I will bring plenty so people can take them.

**Christy in Rock County:** I sent out an email to everyone about the Wisconsin Nursery and Landscape Association summer field day to be held at Agrecol on August 13 from 9 am to 4 pm. If anyone is interested in joining me as an exhibitor, please email me back. Agrecol is a native plant nursery in Evansville, Wisconsin. There is not a yet a plan or theme for the booth, but we do have some pretty banners. Mark and PJ have said they will be there and I will develop more of a plan when I know who else will be there. *From Patti: a number of us have done this around the state and we have display stuff.*

Also, Chrissy Wen from Walworth County and Christy Marsden have teamed up with Candace Miller from University of Illinois to offer a statewide field day at Boerner Botanical Garden on September 1. We have just finished the flyer to share with interested parties.

**Lynn Adams: I just want to let you know what us Range Master Gardeners are working on.**

The Range Master Gardener Volunteer Association is pleased to have Will Allen of "Growing Power" give a free program at the Ironwood Theatre.

We certainly hope that you will have representatives attend this program and *learn how to grow gardeners and future farmers and fight hunger and obesity in your community.*

**Will Allen of "Growing Power" will be speaking at the Historic Ironwood Theatre in Ironwood, MI on Sunday, June 28<sup>th</sup> From 1-3 p.m. Check-in time starts at 12 noon.**

"Growing Power" is an urban agriculture organization headquartered in Milwaukee, Wisconsin. Growing Power was started by Will Allen who bought the Milwaukee farm in 1993. Allen, a former professional basketball player, grew up on a farm in Maryland. In 2008, he was awarded a MacArthur Foundation "Genius Grant" for his work on urban farming, sustainable food production and with Growing Power. In 2010, Allen, founder of the "Growing Power" farm and training center on Milwaukee's north side, was listed in "Time 100: The World's Most Influential People."

**Instead of us charging a fee, please donate three items or a monetary donation to our local food pantries.**

For reservations: <https://rangemastergardenervolunteers1.shutterfly.com> and to sign up or U-W Extension Iron County 715-561-2695 or call Lynn Adams 906-932-3509 or email her at [xiaxia@sbcglobal.net](mailto:xiaxia@sbcglobal.net) or Zona Wick 715-561-3009 or email her at [viczona@centurytel.net](mailto:viczona@centurytel.net)

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 Newsletter #7 is available at <http://www.plantpath.wisc.edu/wiveqdis/>

Topics in this issue include:

Late blight updates  
 Strategizing potato early blight control  
 Vegetable insect update

## PDDC UPDATE

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

*Brian Hudelson, Sean Toporek, Ann Joy and Joyce Wu*

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 May 9, 2015 through May 15, 2015.

<b>PLANT/SAMPLE TYPE</b>	<b>DISEASE/DISORDER</b>	<b>PATHOGEN</b>	<b>COUNTY</b>
<b>BROAD-LEAVED WOODY ORNAMENTALS</b>			
<i>Boxwood</i>	<i>Volutella Blight</i>	<i>Volutella sp.</i>	<i>Milwaukee</i>
<i>Chokeberry</i>	<a href="#"><u>Root Rot</u></a>	<i>Rhizoctonia sp.</i> , <i>Fusarium sp.</i>	<i>Minnehaha (SD)</i>
<i>Lilac</i>	<a href="#"><u>Bacterial Blight</u></a>	<i>Pseudomonas syringae pv. syringae</i>	<i>Rock</i>
<i>Maple (Japanese)</i>	<i>Phomopsis Canker</i> <a href="#"><u>Verticillium Wilt</u></a>	<i>Phomopsis sp.</i> <i>Verticillium sp.</i>	<i>Dane</i> <i>Waukesha</i>
<b>FRUIT CROPS</b>			
<i>Apple</i>	<i>Cytospora Canker</i>	<i>Cytospora sp.</i>	<i>Florence</i>
<b>HERBACEOUS ORNAMENTALS</b>			
<i>Geranium</i>	<a href="#"><u>Edema</u></a> <a href="#"><u>Gray Mold (Botrytis Blight)</u></a>	<i>None</i> <i>Botrytis cinerea</i>	<i>Jefferson</i> <i>Jefferson</i>
<i>Pachysandra</i>	<a href="#"><u>Volutella Blight</u></a>	<i>Volutella pachysandricola</i>	<i>Dane</i>
<b>NEELED WOODY ORNAMENTALS</b>			
<i>Juniper</i>	<i>Kabatina Tip Blight</i>	<i>Kabatina sp.</i>	<i>Ozaukee</i>
<i>Spruce (Green)</i>	<a href="#"><u>Rhizosphaera Needle Cast</u></a>	<i>Rhizosphaera kalkhoffii</i>	<i>Milwaukee</i>

For additional information on plant diseases and their control, visit the PDDC website at