

Wisconsin Horticulture Update Summary, August 08, 2014

Table of Contents

WI WEATHER REVIEW	2
Growing degree days (GDD).....	2
INTRODUCTION	2
HORTS' SHORTS	3
SPECIALIST REPORT: Insect Diagnostic Lab Update	4
Bird Mites	4
Moths.....	4
Questions/Comments	4
<i>Do you know of an insect that eats small holes straight through sugar snap peas??</i>	4
<i>What greyish insect with black wings eats potato leaves?</i>	4
<i>Does the bite of a lone star tick cause an allergy to red meat?</i>	4
SPECIALIST REPORT: Plant Diagnostic Disease Clinic	5
Powdery Mildew on Blueberry.....	5
Anthracnose on Melon	5
Questions/Comments	5
<i>What was the diagnosis for the tomato sample we brought in?.....</i>	5
<i>Can black rot on crucifers move around?.....</i>	5
<i>We had a sample sent in by Keven Schoessow of gaillardia with ghost-like white circular spots</i>	5
<i>Are you tracking basil downy mildew?</i>	5
<i>We have been seeing a lot of aphids on ornamental plants, especially on the petunias.</i>	6
<i>Have there been any reports of aster yellows?</i>	6
<i>I had a chard sample with clear yellow areas almost virus like, as well regular colored areas on leaves.</i>	6
<i>Have you ever heard of CMV on hibiscus?</i>	6
SPECIAL TOPIC: Seed Saving with Grant Olson	6
Hybrids vs. Open-Pollinated Varieties	6
How are seeds formed?	6
Isolation Distance.....	6
Population Requirements.....	7
Market Maturity vs. Seed Maturity	7
Summary	7
Questions/Comments for Grant Olson	7
<i>Can you recommend any books for the seed saver?</i>	7
<i>Do you deal with wildflower/prairie seed saving?</i>	7
<i>Can you speak about seed exchange through libraries?.....</i>	7
<i>Comment from Diana from Pierce County regarding collaboration with Little Free Libraries:</i>	8
<i>Can you describe the Herman's Garden program?</i>	8
ANNOUNCEMENTS	8
FINAL NOTES	8

UW LINKS	8
WHU “OFF THE AIR”	9
ERRATA	9
VEGETABLE CROP UPDATE	9
PDDC UPDATE	9

WI WEATHER REVIEW

Locally heavy showers on August 4 interrupted an otherwise dry weather pattern across the state. Daytime high temperatures during the week ranged from the 70s to around 80°F, and were near normal or a few degrees below normal for early August. Nighttime lows were in the lower 50s to mid-60s. Monday's storms delivered significant and much-awaited precipitation to southern and central Wisconsin, though some produced heavy downpours of 2-4 inches which caused flash flooding in portions of Dane, Iowa and La Crosse counties. Other areas, mainly in eastern and northern Wisconsin, were missed by the early-week rain and are in need of additional moisture soon to support development of reproductive summer crops. Despite a July drying trend, most of the state's crops are faring well under moderate temperatures and sparse rainfall due largely to adequate subsoil moisture reserves established early in the growing season. (Wisconsin Pest Bulletin, Vol. 59, No. 14, Aug 07, 2014)

Growing Degree Days (GDD)

Growing degree days is an accumulation of maximum and minimum temperatures as directly related to insect and plant development. As of August 06, in Wisconsin, the GDDmod 50 ranged from 1006 to 1823: Appleton-1472; Bayfield-1021; Beloit-1843; Big Flats-1585; Crandon-1187; Crivitz-1299; Cumberland-1409; Eau Claire-1621; Fond du Lac-1477; Green Bay-1370; Hancock-1585; Hartford-1468; Juneau-1570; LaCrosse-1794; Lone Rock-1801; Madison-1708; Medford-1303; Milwaukee-1419; Port Edwards-1535; Racine-1425; Sullivan-1468; Waukesha-1468; Wausau-1351 (WI Pest Bulletin Volume 59 Number 14 August 07, 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>): squash vine borer adult emergence, 900; June bride little leaf 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; euonymus scale-2nd egg hatch,1923; magnolia scale-egg hatch, 1934; banded ash clearwing borer-adult emergence, 2195.

INTRODUCTION

Today's WHU host was Waukesha County horticulture educator Ann Wied. The specialists were Insect Diagnostic Lab Interim Director P.J. Leisch and PDDC director Brian Hudelson. The special guest this week was Grant Olson of the Seed Savers Exchange. Other discussion participants were representatives of the following counties: Douglas (Jane); Kenosha (Barb); Milwaukee (Sharon); Pierce (Diana); St. Croix (Heidi); Waukesha (Ann); Portage (Walt); Scott (Marinette/Oconto/Flambeau); Steve (LaCrosse); Eau Claire (Erin); Lisa (Dane); Christy (Rock); George (Columbia); Vijai (Brown); Kristin (Walworth); Patti (Racine).

HORTS' SHORTS

County agents reported similar issues across the state.

Milwaukee County: It has been cool, and we had spotty rain and some hail. The hail caused lots of damage to herbaceous plants. Disease reports for tomatoes have been low even for septoria and early blight, and there has been delayed ripening as well as some leaf roll. Late blight US-23 race has been confirmed in our county. Japanese beetles are here, but populations are lower than normal and we are not seeing the total defoliation of linden trees. Lots of trees that started badly seem to be recovering, maybe due to the emergence of secondary buds. Now these trees will be low on carbohydrate reserves. For the first time, grass has been green all summer.

Waukesha: Our report is similar to Milwaukee County. Evening temperatures have been very cool which has slowed down tomato ripening. We are hoping for the warmer weather to kick in the ripening

Racine: We have had lots of tomato questions; tomatoes not ripening or low numbers of fruit, leaf spot diseases. People are worried about late blight. Sweet 100 and Sungold have had good production, but in 3 different locations every fruit on Juliet had blossom end rot. We had powdery mildew and wilted squash, samples of which I am conveying to Brian's lab. Production is low on cucurbits. Someone sent in a picture of an enormous plant that attracted butterflies and was just beautiful that they wanted to share with neighbors. We had to tell her it was purple loosestrife.

Kenosha: The question du jour has been about EAB. We are down to 2, but effectively 1 municipality since one city straddled the line, in the county which has not observed it. Otherwise, we are having the same issues as others.

Columbia County: The entire county did get rain with some small hail. Although damage was not too bad generally, some corn and soybean fields did see significant damage. We have been getting general weed and insect questions.

Portage County: We had 2.5 inches of rain between Thursday and Monday, but it is starting to dry out again because of our sandy soil. We have reports of blossom end rot, Septoria, bacterial wilt and blossom drop. EAB was confirmed in Adams County, so we are watching for it.

Dane County: Rain has been very spotty here as well and we are dry on the east side of Madison. We are getting questions about dieback on ash trees with yellowing leaves and leaf drop, and people are wondering if it is EAB. We have received pictures of yellowing as well as green leaves dropping. We have had weed ID questions; complaints about slow tomatoes and peppers.

Rock County: We had really good rain mid-week and melons, sweet corn, and Sungold tomatoes are coming on. We have had tree-related questions, weed ID with turf, and some fruit questions. The weather has been fantastic and the warmer forecast should help tomatoes ripen.

Walworth County: Spotty rain, but we had some good rain earlier this week. We are getting questions about millipedes on the patios or in the house and we have seen tar spot on maples. I was out earlier on a tree walk giving a talk and caught an EAB with my bare hand. It afforded me a great educational opportunity for people to see one.

St. Croix County: It has been dry here and we have missed all the rain, with soybeans wilting on sandy soils. We have had calls about trees wilting and collapsing. We had a call from someone from a golf course who observed that there was severe bleaching on ash and hackberry trees. We determined that the problem may have been because he had sprayed Tenacity on the bunkers, then sprayed around the trees possibly without cleaning the tank out resulting in severely damaged trees. We also had questions on what to do about aphids on city-owned hanging baskets. In order to minimize neonicotinoid use, such as Marathon, nothing was being used and the aphids were coming into the baskets from soybean fields and they wanted to know what control options there were.

Pierce County: Rain has been very spotty, with some locations being deluged and other getting nothing although there has been no severe drought or any flooding. Spotted Wing Drosophila is rampant as well and people want to know what and how to spray. Fungal diseases are common but the dog days are coming and people are started to give up. Tomatoes are really late. There have been lots of weed and plant ID questions.

LaCrosse: We have had a lot of ID questions, especially tree leaf diseases, as well as one cockroach ID. We have had good growing conditions and steady rain. The excess moisture has resulted in disease issues. The growing season has been pretty nice.

Eau Claire: We had really good rain on Monday, with knee high water in her street. She is seeing the same issues as others.

Douglas County: We had a pest walk in our community gardens. Insects and diseases are slow due to the cool temperatures, but also because we do have excellent managers. The weeds are not slow, but are lush and vibrant.

Marinette/Oconto/Flambeau: Insects are up and down, but diseases are rampant. We have had decent growing conditions except in the very northern sections of our counties where it is extremely dry and plants are suffering. In general, we had had a typical year in northeastern Wisconsin where anything goes.

Brown: We have had some rain, but the soil is dry, lawns are turning brown and trees are exhibiting early senescence. We are seeing early blight, Septoria, blossom end rot, and catfacing on tomatoes. Japanese beetles are eating raspberries and we have had control questions, even though populations are down. We have had some questions on weed control for lawns and some plant ID questions.

SPECIALIST REPORT: Insect Diagnostic Lab Update

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

P.J. Liesch reported more submissions of bat and bed bugs with more submissions of bat bugs, cicada killers, and Eastern Dobsonfly. Japanese beetle, brown marmorated stink bug, and mosquito populations are down. Other than two submissions from Christy in Rock County, brown marmorated stink bug has been very quiet.

P.J. was out in the field for the EAB field training. A slew of new counties have been quarantined for EAB; it has been confirmed in a total of 30 counties to date.

Bird Mites

These insects are typically around in spring to early summer.

<http://ento.psu.edu/extension/factsheets/bird-mites>

Moths

Conditions have been very good for moth flights and P.J. reported seeing 100 different species around his patio lights. There are many moth pictures coming into the IDL website and the lab. In addition, a survey with the Wisconsin Entomological Society turned up a half-dozen imperial moths in about an hour.

<http://www.ag.auburn.edu/enpl/bulletins/imperialmoth/imperialmoth.htm>

Questions/Comments for P.J. Liesch

Do you know of an insect that eats small holes straight through sugar snap peas?

P.J. thought it might be some kind of weevil or caterpillar, but would have to do some digging to find out any candidates that fit that description.

What greyish insect with black wings eats potato leaves? I have sent a picture.

P.J. did not want to speculate and would have to research it.

Does the bite of a lone star tick cause an allergy to red meat?

Some people do develop an allergy to red meat after being bitten by a lone star tick. There is an allergic response to some of the proteins transferred by the tick. The allergy is typically temporary, but can take up to a year to fade. It is alarming to react to eating a steak.

<http://www.news.wisc.edu/21971>

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 (PDCC) bdh@plantpath.wisc.edu

The PDDC update for August 2 through August 8 is attached to the end of this summary.

It has been busy week in the clinic again for vascular wilts on woody plants, and we diagnosed oak wilt for the first time on an English oak. We also saw bacterial canker on cherry, fireblight on apple and for the first time, hawthorn. Numerous root rot species, affecting herbaceous ornamentals and vegetables, including cucumber and sedum, were seen this week. Vegetable diseases were prevalent this week. We saw Septoria leaf spot and verticillium wilt on tomato.

Powdery Mildew on Blueberry

We diagnosed powdery mildew (*Oidium* sp.) on blueberry. The unusual aspect of this sample was that there was also an amber/gold cast to the white fruiting bodies of the powdery mildew. The gold overtones were attributed to another fungus called *Ampelomyces* that parasitizes the hyphae of the powdery mildew. We see this parasite occasionally, but it is the first time a submitter recognized that something was different with the powdery mildew.

<http://www.biocontrol.entomology.cornell.edu/pathogens/ampelomyces.php>

Anthracnose on Melon

The melon sample came in with angular, but sort of circular brown spots on the leaves and sunken areas on the fruit and we diagnosed anthracnose (*Colletotrichum orbiculare*). A diagnostic feature of this fungus is black eyelash-like setae popping out of the fruit and leaf lesions. You can diagnose this at home if you have a good magnifying glass.

[http://wiki.bugwood.org/Colletotrichum_orbiculare_\(anthracnose_of_cucurbits\)](http://wiki.bugwood.org/Colletotrichum_orbiculare_(anthracnose_of_cucurbits))

Questions/Comments for Brian Hudelson

What was the diagnosis for the tomato sample we brought in? Was it Septoria? I thought one of the plants might have had late blight since the whole bottom half of the plant had died with complete defoliation.

The reports have gone out. This plant was diagnosed with Septoria. One of the distinguishing features of late blight is infection typically occurs from the middle to top of the plant. If anyone has anything they think is late blight, send it in.

Can black rot on crucifers move around? I am seeing it on my broccoli, and some lower leaves of the cabbages.

Black rot can spread by splashing due to overhead watering. I talked with a grower whose kale was really hit hard. It also can be brought in by contaminated seedlings or seed. Then bacterial soft rot ensues and can liquefy the whole center of the plant. Are you seeing angular necrotic areas with yellow borders? If the disease is really bad, you might want to remove the plants to prevent spread. Send in the leaves to be used as an educational sample and we will do it for free.

We had a sample sent in by Keven Schoessow of gaillardia with ghost-like white circular spots.

It is possible that this is white rust. It is not common.

Are you tracking basil downy mildew? Should I get a fresh sample from the grower? Genovese has been very hard hit, but his red variety isn't showing problems. I shared Amanda Gevens report with him and she gave a list of resistant and susceptible varieties.

Yes, we are tracking that as well as impatiens downy mildew, and a lab in New York is typing samples to get an idea of what variants are causing infection. This pathogen causes yellowing leaves and rapid decline. Green varieties seem to be more susceptible than the red varieties. We will do the diagnosis for no charge.

We have been seeing a lot of aphids on ornamental plants, especially on the petunias. Are the symptoms typical of virus, such as the bulls-eye?

We have two positive hits of CMV this year on ornamentals, which is atypical even though we do test for it frequently. The symptoms are weird distorted growth and a little mosaic. CMV results in very bizarre growth that looks similar to herbicide injury. We are also seeing another aphid-transmitted virus, alfalfa mosaic virus, on soybeans. So, the aphid transmitted viruses are around.

Have there been any reports of aster yellows? We saw bunched up flowers on lamb's ears with shortened nodes. We reported aster yellows on celery last week, although we did not do the PCR test to confirm it. We saw the typical symptoms of yellowing, distorted growth and stunting. We did test for other diseases, and there is another yellows disease of celery but we were not able to isolate the organism that causes that, so Amanda Gevens and I attributed the infection to aster yellows. We have not seen a lot of samples of that. Send the sample in but since the PCR test is expensive, we will do it for free as an educational sample.

I had a chard sample with clear yellow areas almost virus like, as well regular colored areas on leaves. This is the first time I have seen chard bolt, and this chard bolted with a weird flower stalk. I originally thought it might be herbicide drift since I sprayed some Round-up. Do you have any ideas?

Send it in with the lamb's ear and we will take a look at it. Definitely think about viruses, because I think there are a lot of them out there that we aren't getting.

Have you ever heard of CMV on hibiscus?

It could be. CMV has a wide host range.

SPECIAL TOPIC: Seed Saving

Presented by Grant Olson (grant@seedsavers.org) of the Seed Saver's Exchange in Decorah, IA

Grant gave a little background on the Seed Saver's Exchange and its mission to encourage people to save and share heirloom and open-pollinated seeds through informal seed swaps, seed libraries and our national exchange. He gave a plug for Christy Marsden of Rock County as a good resource on seed saving. A seed saving guide which detailed different characteristics of plants including life cycle, pollen distribution vector, isolation distance, population requirements, seed maturity, and cross-pollinating plants, accompanied the presentation.

Hybrids vs. Open-Pollinated Varieties

When folks call asking for information on seed saving, the first question we ask is where they got their seeds and if they are open-pollinated. All heirlooms are open-pollinated, but not all open-pollinated varieties are heirlooms. A hybrid means that the parent plants are different and the resultant seeds will have been cross-pollinated. When plants are produced from cross-pollinated seed, these offspring do not look like either of the parents. If both parents are the same, as in open-pollinated varieties, the resulting offspring will look like the parents.

How are seeds formed?

Grant gave a refresher on some basic plant biology and how seeds are formed. Flowers contain male parts, the stamens and anthers which contain the pollen and female parts that contain the stigma and ovary. Fertilization occurs when a pollen grain sticks to the stigma, and forms a pollen tube to convey the male gametes to the ovary to initiate seed growth.

Isolation Distance

Inexperienced seed savers will plant two varieties close together and try to save the seed for the next year. Open-pollinated plants will also cross with other cultivars and the seed will not produce plants with the same characteristics as the parents. If you plant two of the same variety close together, you will get seed that will come true to the parents. If you plant Sungold tomatoes within two feet of a Cherokee Purple, both open-pollinated varieties, there will be an exchange of genetic information and the seeds you take off of the Cherokee Purple plant will not look like the Cherokee Purple when they are grown the next year. To prevent cross-pollination, each species has an isolation distance that is necessary. The accompanying slide gives a guide on the necessary isolation distance. The distances given on the slide are less than we usually use. For plants that are wind-pollinated like corn or beets, the isolation distance is large. For broccoli, the isolation distance is 16-30 feet. If you have two cucumbers you want to save seed from and only 50-100 feet of garden, go ahead and try. It is sometimes difficult to achieve the necessary isolation distance in a home garden, and we just tell people to do the best that they can.

Population Requirements

Some species are susceptible to in-breeding depression. In order to maintain vigor in the line, some plants also require that seed be saved from a large group of plants. Corn, carrots, and alliums all require high populations or after a few years the health and productivity will decline. You can save seeds for a year or two from a handful of plants for these families, but after that, successive generations will not be as vigorous. In general, we tell people to grow as many plants as far away from each other that they can in their gardens. Commercial seed producers have more restrictive guidelines, but most people don't have room in the gardens for plants they can't eat, like broccoli or cabbage.

We don't recommend that you save seed from just one plant, especially if the seed is not rare and you can get it from other sources barring a crop failure.

Market Maturity vs. Seed Maturity

It is important to know when to harvest the seed if you plan to save it to plant in the future. Most fruits are harvested at market maturity which is when the flesh is ready to eat. For most crops, this is not the point of seed maturity. At seed maturity, the flesh is usually overripe. Cucumbers and eggplants need to get brown or yellow-striped in order for the seeds to enlarge and harden. One of the best indicators for seed maturity is that seeds are pretty hard. For beans and peas, the seeds should be just about rock hard in the shell. Squash seeds may mature further off the vine, but it is best to leave them on the vine until frost and the squash is almost rotten. The plant will continue to put energy into the seeds to give them the best chance at viability.

Summary

In summary, the most important things to consider when saving seed are:

1. Is the variety open-pollinated?
2. Is the distance between the varieties sufficient that there will be no exchange of pollen?
3. Is there a large enough population of the same plant to ensure vigorous seed?
4. Are you harvesting the seed when the seeds, not the fruit, are mature?

Questions/Comments for Grant Olson

Can you recommend any books for the seed saver?

Seed to Seed by Suzanne Ashford. It is a little bit old, but this book gives a lot of information on plant families. It is very technical and geared more for mid to large seed producers.

Seed Garden by SSE, will be coming out this winter. This book is focused on the home garden and gives particular attention to spacing crops.

The Seed Savers Exchange website has a lot of useful information and there is also a monthly webinar. The one this month tells how to hand-pollinate squash and other cucurbits and there is one on starting seeds. We also have information on seed storage and starting a seed collection.

Do you deal with wildflower/prairie seed saving?

We don't do it at this farm. To do this successfully for a lot of flowers, you must understand about seed maturity and seed dispersal. When the seed is mature, the plants will be trying to vigorously disperse the seed. You need to catch the ripe seed before the plant dries enough to disperse it, whether it is a pod or flowerhead. Sometimes we make bags out of row cover in two sizes (either lettuce or blossom bags) and the material is such that moisture can get out and sun can get in. We tie them to the flower head to catch the seed before it is dispersed. You can also pull the plant or cut it at the base as they are starting to dry out and hang it upside down with something under it to catch the seeds. That is less ideal as it disturbs the ground or removes the plant, but there is still a lot of energy in the plant to ripen the seeds

Can you speak about seed exchange through libraries? How do growers assure they are getting heirloom seeds? Is there something in place, because it seems a little haphazard with my growers and what they call seed-saving. How do they protect themselves?

Seed libraries are up and coming. We have been spending a lot of time on this through our program called Community Seed Resource Program. There are different goals for seed libraries, but the main impetus is to give a

central free distribution place where people can bring leftover seeds that are still viable and many seed companies have seed donation programs. There is a filing system by plant type and the seed should be viable for a few years depending on how the seed was stored. Libraries sometime can get the seed donated by seed companies. There are lots of seed exchanges in Wisconsin and Iowa that distribute open-pollinated seeds that are adapted to our climate.

One of the challenges of this system is that sometimes folks who are inexperienced seed savers can get unviable seeds. Information on the packet will tell whether the variety is open-pollinated and will come true from saved seed, or if it is a hybrid. There are quite a few companies that offer hybrids and open-pollinated varieties. Baker Creek only offers open-pollinated varieties.

Comment from Diana from Pierce County regarding collaboration with Little Free Libraries: We worked with the people from Little Free Library to get these seed exchanges into the communities and neighborhoods. Check out the Little Free Library website: <http://littlefreelibrary.org/shop/library/seed-recipe-community-exchange-library/>

Thanks to Seed Savers Exchange who donated a thousand packet of seeds to go out with the Little Free Libraries. There are a lot of benefits to having regionally specific varieties that are adapted to pests, soil and climate conditions and historically there were many seed companies in Wisconsin, Iowa, and Minnesota that had these. This seed movement of libraries is to re-establish localized seed production. Some seed companies will accept the idea of growing and saving seed, hopefully correctly.

Can you describe the Herman's Garden program? I knew what it was and was able to receive a lot of seed, but the rest of the state may not know about it.

This is a seed donation program the Seed Savers Exchange implemented. Your community group fills out an application on-line and we will send 50-100 packets of seeds for school or community gardens. One of the criteria is that the produce or saved seed is not being sold. The seeds may be ones we didn't sell. We also send seed screens and other equipment.

ANNOUNCEMENTS

Walt: August 12-14 is Farm Tech Days in Portage County. It's going to be a great show.

FINAL NOTES

The next meeting is August 15. Joy Schelble from Iron County will be hosting and the special topic will be houseplant diseases presented by Brian Hudelson of the PDDC.

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>

WHU “OFF THE AIR”

During this past week specialists have commented on these issues off the air:

Johanna Oosteryk replied with her findings on the Chameleon Plasma lighting.

“This is a followup on the question about plasma lighting from Heidi in St. Croix.

There's not a lot of information out there about plasma grow lights. They are fairly new as supplemental lights.

I looked into what the manufacturer had to say. It seems like another reasonable alternative for commercial growers. However, like LEDs they're still very expensive and the website specifically says that they are not intended to completely replace HID grow lights, just supplement. I'm not sure why they add this because the output spectrum is very broad - similar to metal halide HIDs.

I also asked about it on a list of university greenhouse managers that I subscribe to. They were tested side by side with LEDs and HIDs at Purdue, but the researchers weren't terribly impressed.

They seem over priced to me compared to HID and even LED fixtures and I can't figure out that they offer any real benefit that the others don't.

Thanks for pointing them out.”

ERRATA

On page 4 of the WHU Written Summary of August 01, 2014, the organism that causes fusarium yellows is *Fusarium oxysporum*.

VEGETABLE CROP UPDATE

Vegetable Crop Update Newsletter #17 is available at <http://www.plantpath.wisc.edu/wivegdis/>

Topics covered in the issue #17 include:

Late blight updates

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

Cucurbit downy mildew update

Onion and basil downy mildew

Plant Disease Diagnostic Clinic updates

PDDC UPDATE

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

Brian Hudelson, Ann Joy, Joyce Wu, Tom Hinsenkamp, and Catherine Wendt, Plant Disease Diagnostics Clinic

The PDDC receives samples of many plant and soil samples from around the state. The following diseases/disorders have been identified at the PDDC from August 2, 2014 through August 8, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
BROAD-LEAVED WOODY ORNAMENTALS			
Birch	Root Rot	<i>Pythium</i> sp.	Lincoln

Cherry	Bacterial Canker	<i>Pseudomonas syringae</i>	Racine
Crabapple	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Waukesha
	Winter Injury	None	Dane, Waukesha
Elm (Unspecified)	Dutch Elm Disease	<i>Ophiostoma ulmi</i>	Dane
Hawthorn	Fire Blight	<i>Erwinia amylovora</i>	Waukesha
	Phomopsis Canker	<i>Phomopsis</i> sp.	Waukesha
Maple (Japanese)	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
Maple (Unspecified)	Verticillium Wilt	<i>Verticillium</i> sp.	Kenosha
Oak (Bur)	Anthracnose	<i>Discula</i> sp.	Dane
	Chlorosis	None	Dane
Oak (English)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Milwaukee
Oak (Red)	Armillaria Root Disease	<i>Armillaria</i> sp.	Dane
	Chlorosis	None	Waukesha
	Oak Wilt	<i>Ceratocystis fagacearum</i>	Sauk
	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Waukesha
Oak (White)	Tubakia Leaf Spot	<i>Tubakia</i> sp.	Dane
Oak (Unidentified)	Oak Wilt	<i>Ceratocystis fagacearum</i>	Dane, Sauk
FRUIT CROPS			
Apple	Cedar-Apple Rust	<i>Gymnosporangium</i> sp.	Grant
	Fire Blight	<i>Erwinia amylovora</i>	Brown
	Frogeye Leaf Spot	<i>Botryosphaeria obtusa</i>	Grant, Wood
	Phomopsis Canker	<i>Phomopsis</i> sp.	Wood
	Sooty Mold	None	Brown
Blueberry	Powdery Mildew	<i>Oidium</i> sp.	Eau Claire
HERBACEOUS ORNAMENTALS			
Sedum	Root Rot	<i>Rhizoctonia solani</i>	Dane
NEELED WOODY ORNAMENTALS			
Pine (White)	Diplodia Shoot Blight and Canker	<i>Diplodia</i> sp.	La Crosse
Spruce (Blue)	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	Sheboygan
	Stigmima Needle Cast	<i>Stigmima</i> sp.	Sheboygan

VEGETABLES			
Cucumber	Root Rot	<i>Pythium</i> sp.	Dane
Melon	Anthracnose	<i>Colletotrichum orbiculare</i>	Dane
Tomato	Septoria Leaf Spot	<i>Septoria lycopersici</i>	Dodge, Rock, Sauk
	Verticillium Wilt	<i>Verticillium</i> sp.	Rock

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