

# Wisconsin Horticulture Update Summary, May 1, 2015

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## WI WEATHER REVIEW

The 60<sup>th</sup> season of the Wisconsin Pest Bulletin has commenced!

Mostly sunny skies and mild temperatures favored spring planting during the final week of April. The return of warm weather promoted a rapid pace of fieldwork, though dry air in the region brought considerable day-night temperature variation, with highs in the 60s and 70s and lows in the 30s and lower 40s. Lake breezes kept daytime

highs in the 50s along the Great Lakes shorelines. Full-scale fieldwork resumed across most of the state, as the planting of oats and potatoes advanced well ahead of last year's pace and the five-year average. Alfalfa and winter wheat growth accelerated under sunny skies. Corn planting began in full in areas where soil temperatures were suitable for seed germination, and reports indicate that significant seedling progress was made during the week. Dryness remains a concern in western Wisconsin and more rain will be needed statewide to support germination and early crop development. (<http://datcpservices.wisconsin.gov/pb/index.jsp>)

Average soil temperatures at 2" as of April 30, 2015: Hancock 54.5, Arlington 55.1.  
([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 138 to 295. Following is a list of DD as of May 04, 2015 for the following cities: Appleton 194; Bayfield 149; Beloit 283; Big Flats 253; Cumberland 210; Crandall 153; Crivitz 138; Eau Claire 247; Fond du Lac 183; Green Bay 150; Hancock 253; Hartfield 184; Juneau 217; LaCrosse 295; Lone Rock 280; Madison 264; Medford 185; Milwaukee 152; Port Edwards 241; Racine 149; Sullivan 184; Waukesha 184; Wausau 190. To determine the GDD of any location in Wisconsin, use the degree day calculator at the UW Extension Ag Weather webpage:

[http://www.soils.wisc.edu/uwex\\_agwx/thermal\\_models/degree\\_days](http://www.soils.wisc.edu/uwex_agwx/thermal_models/degree_days)

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): Silver maple, first bloom, 34; Cornelian cherry dogwood, first bloom, 40; silver maple, full bloom, 42; red maple, first bloom, 44; speckled alder, first bloom, 52; northern lights forsythia, first bloom, 58; Japanese pieris, first bloom, 60; red maple, full bloom, 75; star magnolia, first bloom, 83; border forsythia, first bloom, 86; **eastern tent caterpillar, egg hatch, 92**; Manchu cherry, first bloom, 93; northern lights forsythia, full bloom, 94; Norway maple, first bloom, 116; border forsythia, full bloom, 116; chanticleer callery pear, first bloom, 123; sargent cherry, first bloom, 127; **larch casebearer, egg hatch, 128**; Japanese pieris, full bloom, 129; saucer magnolia, first bloom, 133; common flowering quince, first bloom, 137; Bradford callery pear, first bloom, 142; **European pine sawfly, egg hatch, 144**; weeping Higan cherry, first bloom, 145; P.J.M. rhododendron, first bloom, 147; chanticleer callery pear, full bloom, 149; Norway maple, full bloom, 149; **inkberry leafminer, adult emergence, 150**; sargent cherry, full bloom, 151; star magnolia, full bloom, 151; Allegheny serviceberry, first bloom, 153; Manchu cherry, full bloom, 155; spring snow crabapple, first bloom, 155; apple serviceberry, first bloom, 159; **spruce spider mite, egg hatch, 162**; Bradford callery pear, full bloom, 164; Allegheny serviceberry, full bloom, 169; saucer magnolia, full bloom, 174; P.J.M. rhododendron, full bloom, 178; **boxwood psyllid, egg hatch, 179**; weeping Higan cherry, full bloom, 179; Koreanspice viburnum, first bloom, 185; 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.

## WI CROP PROGRESS AND CONDITION

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

[http://www.nass.usda.gov/Statistics\\_by\\_State/Wisconsin/Publications/Crop\\_Progress\\_&\\_Condition/2015/WI\\_05\\_04\\_15.pdf](http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crop_Progress_&_Condition/2015/WI_05_04_15.pdf)

## INTRODUCTION

The host for today's WHU was Sharon Morissey from Milwaukee County, who was hosting from the Hancock Research Station. The update conference was well-attended as it proceeded the state-wide hort team meeting. PDDC Director Brian Hudelson was the specialist participant. Erin Silva, UW Madison Department of Plant Pathology was the special guest speaking about pesticides for organic gardening. Participants in today's discussions were representatives from the following counties: Ashland/Bayfield (Matt Carter), Brown (Vijai Pandian), Columbia (Kelly, George Koepf), Douglas (Jane Anklam), Kenosha (Barb Larson), Outagamie (Kevin Jarek), Milwaukee (Sharon Morissey), Rock (Christy Marsden), Pierce (Diane Alfuth), Racine (Patti Nagai), Sawyer/Burnet/Washburn (Kevin Schoessow), St. Croix (Heidi Doering), Walworth (Chrissy Wen), Waukesha (Kristen Krokowski), Winnebago (Kim Miller) and Wood (Peter Manley).

## HORTS' SHORTS

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

Ashland/Bayfield: MGV training has nearly concluded, as well as pesticide applicator training. I am starting a program in June called Backyard Farming for people who want to raise their own sheep, bees, pigs. Kevin came up with some growers who wanted to meet with established blueberry growers for a grower to grower meeting. We are just starting to leaf out, but about a month ahead of last year. Forsythia still isn't blooming. We have been relatively dry although we did have snow and sleet last week. It isn't super dry, but compared to last year when we had 4 feet of snow, it is. The fire danger is medium to high.

Sawyer/Burnet/Washburn: Dandelions and forsythia are blooming and cherry buds on Nanking are swelling. We are getting a little slower start because of the changeable weather. We need more rain. We are getting early season lawn questions about putting on weed and feed, using pre-emergents, how to get rid of moths, and people are asking for soil tests kits for both field and garden soils. We haven't had any disease or insect problems to date. People are also asking about needle drop on pines and other tree decline effects but it is hard to diagnose. Lake owners are returning and seeing problems and maybe they need a little guidance. My grapes survived better this year maybe because they are more established. I am seeing crown galls on grape stems in our grape variety trial at the Spooner Research Station.

Douglas: We are about the same as Matt and Kevin. In our native plant demo area, the lupines and bergamot are coming along on the sandy soil, they are about the size of a dime and coming ahead of the weeds. We are starting our Community Garden spring prep today. Everything is a hazy green.

Pierce: Magnolias and PJM rhododendrons are blooming. Forsythia are fading. We are getting insects on the windshield. Some are doing their first lawn mowing but they should be raising the deck. It is a normal spring. Everything is greening up and fire danger is down. Red maples are blooming but not in leaf yet.

St. Croix: Daffodils are blooming in my yard. Questions range from conifer dieback to crabgrass prevention to squirrels in the house. People are trying to be proactive and asking what varieties of fruit tree to get in the wake of last year's fungal problems.

Brown County: It has been dry here and we really need rain. Magnolias, forsythia, and tulips are blooming. Crabapples and roses are starting to leaf out. We are getting questions about lawns such as what to do about dead patches in the lawn because of the lack of snow cover and the usual questions about conifer dieback. Ticks are active.

Columbia County: We are seeing a little dieback on conifers. We are seeing some powdery mildew on lawns due to the cool weather. I did the first mowing at 3.25 inches just to even it out a bit. We are waiting on a press release because there was another report of EAB.

Outagamie: Our MGV training is underway. We are getting questions about conifers and lawns. It is surprising how many people go on-line and get a recommendation to add lime even if it is on clay with a high pH. There are questions on soil tests. Spring cleaning has led to people bringing in carpet beetles and jumping spiders (a shout out to PJ for his patience with less than ideal photos) wanting to make sure they weren't bedbugs. Someone brought in old raspberry canes and I don't know if it is anthracnose or cane borers. There have been questions on weed ID and I have been monitoring soil temps not just for horticulture but agronomy. The cold nights knocked down the soil temps to 40 degrees F from the mid-forties at the beginning of the week, but we have now recovered.

Corn planting is underway. We had the grain team teleconference before this and we had the state dairy team here today because of the alfalfa winter kill.

Waukesha: Magnolias are blooming and the dandelions are attracting a lot of pollinators. My lawn needs mowing. We have seen early blight on greenhouse tomatoes and downy mildew on basil. *Brian asked if sporulation was seen on the tomatoes and urged Kristen to send the sample in for free diagnosis to make sure it wasn't Tomato Spotted Wilt Virus which looks similar to early blight. The presence of thrips may be an indicator. If it early blight, you can see long beaked spores if it is sporulating.* The sample has been bagged for moist incubation to encourage sporulation but the spots look very much like early blight. My microscope isn't that good, but I do see some little black spores. *It also could be a non-pathogenic Alternaria.*

Kenosha: We are about the same as Walworth. Garlic mustard is out and I pulled out flowering plants next to the office. Closer to the lake in the city of Kenosha, forsythia is in full bloom due to the lake effect, but is done a little further west. Keep in mind microclimates.

Milwaukee: Star magnolias are starting to fade, but saucer magnolias are blooming. There are a lot of daffodils blooming and some tulips. Crabapples are in tight bud. Norway maples are in full flower and Callery pears are starting to flower. It has been dry. The soil temp is at 48 degrees and on Monday it was 42 degrees. We are seeing the first lawn mowing.

Winnebago: We are farther along than Kevin and Vijai. The forsythia and magnolia are past their peak. We are a little dry so community gardens are now being tilled because the soil is dry enough and this is way ahead of normal. This is a first for opening our gardens early. We have had questions about spraying fruit trees and diplodia on pine trees, some spruce fungus. We have had some growing questions.

Rock: We are really ahead of everyone. Our cherries and pears are blooming, as well as tulips, daffodils and dandelions. Magnolias are fading. We are on our second or third lawn mowing. Our community gardens opened last week. We are getting questions about lawna, EAB and brown marmorated stinkbugs. Last year we had a report of the BMSB eating tomatoes not just coming into houses.

Walworth: Norway maples, pears, cherries, serviceberries, perennial vinca, Lenten roses, tulips, and daffodils are blooming. Lilac flower buds are swelling. Honeysuckle and buckthorn are leafing out making them easy to identify and start to control. Woodland flowers such as bloodroot and spring beauty are blooming and mayapples and trillium are up. We still have small pockets of frost. For insects, we have had tick reports and there are lots of big bumblebees and other pollinators out. Creeping Charlie is in bloom and spireas are leafing out.

Wood: Not much change from last week; it is still a mix of green and brown. The cold temps last week put us in a holding pattern. We had some rain, but really need more.

## **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)*

There was no Insect Diagnostic Lab Update this week.

## **SPECIALIST REPORT: Plant Diagnostic Disease Clinic**

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

This week was a little light because of a heavy travel schedule this week touring Amish greenhouses and attending a diagnosticians conference. The PDDC update is attached to the end of this summary.

We had a maple with verticillium and spruce with rhizosphaera needle cast. There are some as yet undiagnosed geraniums waiting for me.

## Questions

### Blueberry Disease

*There are little black spots on a two-year old twig of blueberry. The little black spots are about 0.25 inches apart and they cover the stem. It looks like you could just pick them off. Do you have any ideas on what it could be?*

It is difficult to diagnose without seeing a sample. It could be a canker organism or it could be Phomopsis. That organism has little grayish to black fruiting bodies that are kind of enclosed. Nectria canker looks kind of like a bouquet, starts out pinkish then turns black over the winter. Sometimes some water or root stress or cold injury opens up the tissue to these organisms.

## SPECIAL TOPIC: Pesticides for Organic Gardening

*Presented by Erin Silva, UW Madison/Extension Department of Plant Pathology*

The WHU site will reference the supplemental material from Erin. One reference is the national list of allowed substances and the other is the OMRI Products List.

### Introduction

This presentation will focus more on where the organic pesticide regulations come from and what they mean to home gardeners vs. market gardeners. For instance, even if a market gardener is not certified organic because they are selling on a small scale, they still must follow the guidelines. For home gardeners, it is more of a gray area as to what organic might mean.

### Background

Where do you find out whether a product is considered organic? The National Organic Standards is a very long list of regulations residing with the federal government. These standards apply to both national and international growers. Imported food labeled as organic is inspected and certified by the same standards as food grown in the United States. Guidelines such as what agricultural practices are used or what pesticides are used must be followed. For instance, the guidelines address crop rotation or soil building, but also contain a component called the National List.

The National List gives more specificity as to what is allowed or prohibited. The overarching guideline is that synthetic substances are not allowed and non-synthetic substances are allowed. Some exceptions exist where there is no acceptable non-synthetic alternative and the crop could not be grown reliably without using the synthetic option. These exceptions have been vetted by the National Organic Standards Board and National Organic Program. Even for allowed substances, a review is conducted every 10 years to determine if a safer alternative is available and a decision is made as to whether a substance should be sunsetted off the list. The National List is a lot of information but it is the ultimate guideline for allowable substances.

### Organic Materials Review Institute (OMRI)

There are misconceptions regarding the role OMRI plays. They do not make decisions about what is allowed which is the responsibility of the National Organic Standards Board and National Organic Program. OMRI is a non-profit organization that can review more proprietary ingredients of specific products to make sure they fall within the national guidelines. Manufacturers may not want all of their ingredients revealed. Since not only active ingredients but carriers and inert ingredients must also be allowed, OMRI's function is to say whether a product meets the standards in a more confidential way.

If an organic grower wants to know if a specific product or brand such as a pesticide or even a compost or fertility input has been certified organic, the OMRI product list can be used with confidence. Something could be still be certified organic and not on the OMRI list. That just means that the manufacturer has chosen not to use OMRI. In that case, the grower should check with their certifier to make sure the product is allowable.

### Organic Pest Management

Many substances currently used are biological in nature and there are more questions as to the efficacy. Erin is working with Amanda Gevens and Russ Groves to develop a list of guidelines for Wisconsin. At this time, they are

using the Cornell list which is very comprehensive ([http://nysipm.cornell.edu/organic\\_guide/](http://nysipm.cornell.edu/organic_guide/)) and was updated in 2014.

### Options

1. Plant disease resistant vegetables and flowers.
2. Plant insect resistant plants.
3. Don't use pesticides as the first line of defense.
4. Apply products in the evening or on a cloudy day( not a rainy day) to maximize the active time before they degrade in the sunlight. Many products are only active for 12-24 hours.

The Cornell guides give common insects or diseases and recommendations for specific products to use and pre-harvest and reentry intervals. Because organic pesticides degrade so readily in sunlight, these intervals are often short. The product information is cross-referenced to the OMRI list, but farmers should also check with the certifier before using any product in case a formulation has changed or something has fallen off the list. The active ingredients don't change so much, but other ingredients may. The guides also give very current information regarding cultivars that exhibit resistance.

### Efficacy Ratings

The tables do give efficacy information, but a lot of studies have not been done on the efficacy of organic pesticides. Many are labeled and allowed, but the actual efficacy is not well known. To tease out this information, the authors of the guides have done extensive literature review of extension publications of various states and peer-reviewed literature to determine how consistently a product is deemed to be effective between researchers.

The products are then rated with the following scale:

1. Confidence in efficacy (effective in half or more of the research trials when applied correctly)-recommended for use.
2. Efficacy is variable (labeled and allowed for use)-recommended for use with strong caveats.
3. Not effective in trials even though allowed and labeled-not recommended for use (discourage use).

The tables also give explicit application instructions addressing timing, frequency, and rates of product applications in cole crops, peas, lettuce, etc., and rotation of products to minimize or avoid resistance. The guides also give scouting thresholds when available, although not a lot of information is available for organic vs conventional culture.

### Mode of Action

Many organic pesticides mode of action is either as a contact or stomach poison. As such, it influences the strategy for application for both home gardeners and commercial growers. For instance, both Entrust® and Bt are effective insecticides but must be ingested because they impact the gut. PyGanic® is also very effective but must make contact with the insect. Due to the low residual effective time, it is important that for both contact and stomach poisons, the spray is targeted to the insects' location on the plant. For plants such as cucurbits or squash that may have a dense canopy which shields the insects, care must be taken to get good coverage to be effective.

PyGanic® is a broad spectrum insecticide and can impact pollinators and other beneficials. Application must be made at night to avoid killing bees which are active during the day. Neither Entrust® or Bt impacts beneficials because they have more specific pest targets and are considered a "softer" insecticide. With any pesticide, organic or conventional, timing, application rates and rotation of active ingredient to minimize insect resistance, should be kept in mind.

## Questions/Comments

### Synthetic option safer than non-synthetic

*You mentioned that exceptions are made if a non-synthetic product is unavailable. What happens in the situation where the synthetic product is shown to be safer than the non-synthetic product.*

This is philosophical. I don't see the overarching guideline (non-synthetic allowed and synthetic prohibited) going away with lots of exceptions. For instance, copper is an allowable non-synthetic but safer alternatives may exist.

Rotenone and nicotine may also be in that category, but they may be sunsetted and removed from the allowable list since there are other options available now. The list may not be static, but there aren't too many exceptions

### Use of Milorganite

*In our Master Gardener discussion, it was hard to find the most current information regarding the use of milorganite.*

I haven't heard of movement to allow the use of milorganite in organic. Sewage sludge has been disallowed for a variety of reasons such as heavy metals and other contaminants vs other fertility sources such as manure and compost which are seen as safer.

### How to advise community gardeners, especially about copper?

*We are looking forward to the Wisconsin guidelines you are developing. How can we best advise community gardeners in organic practices? We try not to use anything, but one we do use is copper to manage late blight and we are concerned about Spinosad because of the limit of four applications.*

Amanda has been doing extensive research on copper, because of concerns during application and eating treated produce. One of the alternatives is a horticultural oil based product, which is recommended over copper for late blight and is also good powdery mildew management. Amanda's website has some details, but I am not sure it is as available on the home gardener scale as copper is. I will have to look into sources for that product.

For Spinosad, the issue is less about a human health or environmental health standpoint. It depends on the pest since you want to control to make sure resistance doesn't occur. It can be rotated with Neem or Pyganic and timely management of insects when they are small is helpful.

### Shelf life of Spinosad

*What is the shelf life of Spinosad?*

Most biologicals have a shorter shelf life. The best practice is to buy small quantities every year.

### Disposal of Organic Pesticides

*How should these organic pesticides be disposed?*

I will need to research shelf life and disposal options.

I am happy to answer any questions as the season progresses.

## FINAL NOTES and ANNOUNCEMENTS

Next week, the host will be Patti Nagai from Racine County and the special topic is not yet known, but the scheduled presentation with Amanda and Russ will not be given. Brian is working on a substitute.

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 14 in Walworth County at the Geneva National Resort in Lake Geneva 8:45 am to 4:45 pm-This session is nearly full.

May 27 in Marathon County Extension in Wausau 8:45 am to 4:45 pm

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

Topics in this issue include:

Late blight reminders and updates

Linuron herbicide update

Small acreage vegetable

Sustainability assessment

Hops updates

## 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 April 25, 2015 through May 1, 2015.*

<b>PLANT/SAMPLE TYPE</b>	<b>DISEASE/DISORDER</b>	<b>PATHOGEN</b>	<b>COUNTY</b>
<b>BROAD-LEAVED WOODY ORNAMENTALS</b>			
<i>Maple</i>	<a href="#"><u>Verticillium Wilt</u></a>	<u>Verticillium sp.</u>	<i>Dane</i>
<b>HERBACEOUS ORNAMENTALS</b>			
<i>Petunia</i>	<i>Unspecified Potyvirus Disease</i>	<i>Unspecified potyvirus</i>	<i>Monroe</i>

<b>NEEDED WOODY ORNAMENTALS</b>			
Spruce (Blue)	<a href="#">Rhizosphaera Needle Cast</a>	<i>Rhizosphaera kalkhoffii</i>	Racine

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).