



**BROWN COUNTY UW-EXTENSION  
PLANT HEALTH CLINIC DIAGNOSTIC UPDATE**

**July 24, 2015**

**Diagnostic Master Gardener Team Members:**

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**Girdling Root**

Most tree roots are in the top 6-24" of soil growing out from the trunk in a spreading manner. Girdling roots are those that wind up growing around the trunk of a tree instead of out into the soil. As the trunk of the tree grows in diameter, the girdling root slowly chokes off the flow of water and nutrients. They may be clearly visible above the soil line, but often found below ground. Girdling roots do not become obvious until 5-20 years after a tree is planted. It happens so gradually that you don't realize there is a problem until it's too late. Symptoms are reduced growth, smaller-than-normal leaves, fewer leaves, lighter green leaf color, branch dieback, and eventual death of the tree. Most susceptible trees are maples, lindens, and ash.

Trees should always be planted so the root flare is just at ground level. If it goes straight into the ground like a telephone pole, it's planted too deep. When planting a container-grown tree, score the rootball by cutting an inch deep from top to bottom on at least four sides and 2 diagonal cuts across the bottom, pruning off any roots that are circling that can't be untangled. Dig the hole 2 or 3 times as wide as the rootball. Backfill with original soil rather than amending with organic matter.

Two to three inches of mulch is sufficient and should be placed to, but never touching, the trunk extending out to drip line. Too much mulch can encourage voles and other rodents, while holding too much moisture during wet weather.

Trees can survive girdling roots if caught early on and girdling roots are removed while they are still small. It's best to have a certified arborist to check if removing the root may save the tree. Never attempt to remove very large girdling roots.



***Submitted by Julie Cole, Master Gardener Volunteer***

## Root Rot

This is a general term that describes any disease in which a pathogen attacks and deteriorates the plant's root system. Most plants, both herbaceous and woody, are susceptible. Root rots can be chronic or acute, leading to the death of a plant.

The above-ground systems are stunted or wilted growth and leaves that turn yellow or red as in a nutrient deficiency. The roots show tissue that is soft and brown. Several types of soil-borne fungus cause this disease. They love wet soil conditions so keeping your site well-drained will help. Also remove excess mulch that would retain too much moisture. Water only to sustain plant growth.

There are chemical treatments that you can use, but you **MUST** know which pathogen you have. Bring in a complete plant sample (with roots) to the diagnostic office for identification purposes. A sample may be sent to the Madison diagnostic office.

Remove all of the plant parts from your site and dispose of them in the garbage, do **NOT** compost. Do not put the same type of plant in that site for at least a year to allow the pathogen to die-out.

For complete information including a listing of the pathogens and chemical treatments, see Diagnostic Fact Sheet XHT1072.

***Submitted by Lynn Clark, Master Gardener Volunteer***



## West Nile Virus

A client called recently to ask if they should report a dead crow that was in their lawn. While this may seem an unusual call for our horticulture office, it really is quite important since dead birds can serve as an early warning to indicate the presence of West Nile Virus (WNV) in an area.



WNV is a disease that is carried by birds and can be transmitted to humans through the bite of a mosquito that has fed on an infected bird. While it is comforting to know that 80% of people that get WNV don't show any symptoms, there are about 1% of those infected that experience severe symptoms. The Wisconsin Division of Public Health tracks this disease in the state by collecting reports of dead birds, particularly those in the corvid family (crows, blue jays) which come into their hotline from citizens. To report dead birds, call the Dead Bird Reporting Hotline at 800-433-1610.

Reference: Wisconsin Division of Public Health, Division of Health Services, Disease Fact Sheet Series "West Nile Virus Infection"

***Submitted by Doug Hartman, Horticulture Assistant***

## Blossom End Rot

Blossom end rot is a physiological disorder of tomato in which the tissue of the blossom end of the fruit (the portion of the fruit opposite the stem) breaks down and rots, thus reducing yield. Pepper, eggplant, and squash (e.g. zucchini) fruits can also be affected.

### What does blossom end rot look like?

Blossom end rot often occurs on the first fruits formed on plants. Initially, water-soaked spots (resembling small bruises) appear, most often on the blossom ends of fruits. On peppers these spots can resemble sunscald and can form on the sides of the fruits near the blossom end. Spots enlarge, becoming dark brown to black, sunken, and leathery. Half the fruit may eventually be affected. Sometimes, when a fruit is cut, the exterior will be sound, but the interior will be discolored and shrunken. Often, bacteria and fungi invade the discolored areas, leading to tissue decay.



**What causes blossom end rot?** Blossom end rot is caused by a lack of calcium in the fruit. This lack of calcium may be due to low calcium levels in the soil. More often, there is plenty of calcium in the soil, but its availability for uptake and transport to fruits is impaired. So adding egg shells or other calcium sources is unlikely the answer because if you put too much calcium in the soil, you will have a magnesium shortage problem because calcium and magnesium compete to be taken into the plant. Stress, alternating soil moisture extremes, and damage to a plant's roots all can inhibit calcium uptake, as can waterlogged or cold soils, and high concentrations of ammonium ( $\text{NH}_4^+$ ), potassium ( $\text{K}^+$ ), and magnesium ( $\text{Mg}^{++}$ ) cations in soil. Movement of calcium within plants depends on active transpiration (i.e. loss of water through above-ground plant parts).



**Control:** Avoid conditions of too much or too little water. Irrigate evenly and mulch the soil to retain moisture during dry periods. Avoid cultivation near plants that would damage roots. Use nitrate ( $\text{NO}_3^-$ ) rather than ammonium ( $\text{NH}_4^+$ ) forms of nitrogen fertilizer. DO NOT over-fertilize.

See <http://hort.uwex.edu/articles/blossom-end-rot/>

**Submitted by Dan Mitchell, Master Gardener Volunteer**

## Bell Pepper Plants: Buds Drying Up, No Pepper Blossoms

Of the many different reasons for the lack of flowering or bud drop on pepper plants, the most common include the following:

**Temperature:** Pepper plants are extremely sensitive to temperature. This is probably one of the most common causes for lack of flowering or bud drop and one of the most likely to suspect first. Optimum daytime temperatures for bell pepper varieties are between 70 and 80°F, with up to 85°F for hot varieties, like chili peppers.

Nighttime temperatures falling below 60 or rising above 75°F are also indicative of bud drop. In addition, overly cool conditions, especially early in the season, can prevent buds from forming.

**Fertilizer/Water Practices:** Oftentimes, too much nitrogen fertilizer will affect pepper blossoms. Instead of producing a pepper flower, the plant puts all of its energy into foliage growth. However, low fertility and low moisture levels can also result in poor flowering, bud drop, and stunted growth.

Drought can cause pepper flower and bud drop. Water regularly and deeply using soaker hoses or drip irrigation instead.

**Submitted by Sue Roulette, Master Gardener Volunteer**



## UW-Extension Garden Field Day

Don't miss the 2015 Garden Field Day – there is still time to register! The program is held on the grounds of the Ag & Extension Service Center, 1150 Bellevue Street, Green Bay. This year's topics and speakers include:

- **Growing Lawn Grass in Shade** – Bruce Schweiger, UW Turf Diagnostic Lab Manager
- **Best Management Practices to Prevent Diseases in Your Vegetable Garden** – Dr. Brian Hudelson, UW Extension Plant Pathologist
- **The Inside Scoop on Pollinators & What YOU Can Do to Help** – P.J. Liesch, UW Extension Entomologist
- **Native Prairie Plants for Wet Sites** – Kevin Hendricksen, Brown County Invasive Species Coordinator
- **Fruit Tree Care & Maintenance** – Dr. Amaya Atucha, UW Extension Fruit Specialist

Registration fee is \$25 per person payable to NEW Master Gardeners. Send your registration to: UWEX Hort Dept., 1150 Bellevue Street, Green Bay, WI 54302. For more information visit our website at [www.BrownCountyExtension.org](http://www.BrownCountyExtension.org) or call Kathy at 920-391-4653.

## Verticillium Wilt

Are you noticing any sudden branch wilt on your maple or ash tree? It could be verticillium wilt disease. Verticillium wilt is a soil borne fungal disease that enters through the tree roots and blocks the movement of nutrient and water uptake. This disease causes the individual branches to suddenly wilt and dieback during the summer season. Maples and ash trees are highly vulnerable to verticillium wilt disease. Other tree species like catalpa, Japanese tree lilac, elm, linden, and red bud are also susceptible to this deadly fungus.



The affected tree shows the wilting symptom either on one side of the tree or randomly all around during the summer season. In addition, maples and red bud have a distinct green or brown color streaking symptom underneath the bark skin.

Unfortunately, not much can be done to save the affected tree from verticillium wilt. However you can try to extend the life of the tree by watering them during the dry season and fertilize it in June to boost its health. Prune the dead branches, and disinfect your pruning tool using rubbing alcohol. Dispose the pruned branch by burning or landfilling it. In the future, plant verticillium wilt resistant deciduous species like apple, aspen, azalea, beech, birch, butternut, crabapple, dogwood, flowering quince, ginkgo, hackberry, hawthorn, hickory, holly, honeylocust, katsura tree, mountain-ash, oak, pear, poplar, sweetgum, sycamore, walnut, and willow.

***Submitted by Vijai Pandian, Horticulture Educator***

**Contact: 920-391-4615 or [BC\\_UW\\_Extension\\_Horticulture@co.brown.wi.us](mailto:BC_UW_Extension_Horticulture@co.brown.wi.us)**



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