Rainy Season Equals Phytophthora Disease in Ornamentals

Source: Nicole Gauthier, Plant Pathology Extension Specialist and Kim Leonberger, Plant Pathology Extension Associate

Spring rains can create growing conditions that are devastating to most landscape plants. Wet soils are favored by a group of pathogens called water molds, or oomycetes, which cause a range of root and stem diseases.

Water molds are found in most soils, but plant stress and high pathogen numbers can lead to severe disease. One common water mold is Phytophthora. This pathogen is common in Kentucky and has recently been diagnosed causing root rot on numerous plants, such as blueberry, arborvitae, and Colorado blue spruce.

**Phytophthora Facts**

* Symptoms vary greatly due to disease severity and host characteristics.
* Roots are concealed, so disease often goes undetected until plants begin to decline or upper plant parts wilt (Figure 1) as a result root reduction (Figure 2).
* Disease often begins during rainy spring weather, but it is typically not noticed until hot dry weather initiates wilting.

Figure 1: Lower portions of the plant may decline or die-back as a result of Phytophthora root rot. Note excess water puddling.  
(Photo: Nicole Ward Gauthier)
Aboveground infections may result in symptoms ranging from yellow mottling of leaves to water-soaked lesions on leaves or succulent stems. Woody tissues may develop cankers, often near the soil line.

Free water is required to allow for “swimming” spores to move to new sites of infection.

Spores are spread by splashing water and movement of contaminated soil particles.

The pathogen can produce survival structures that allow it to lie dormant during hot dry seasons or during winter.

**Management**

Most *Phytophthora* diseases can be prevented or managed using cultural practices. Consider the management tips below to prevent infections or to help manage infected nursery or landscape plants.

- Improve drainage through management of surface water, limited irrigation, diverting downspouts, or planting in raised beds.
- Disinfest tools and containers.
- Dispose of infested potting media.
- Inspect plants prior to purchase or during production to insure that plants are healthy prior to installation.
- Do not compost infected plant material.
- Remove plant debris and other sources of inoculum.
- Mulch plants to reduce spore splash.
- Use resistant cultivars whenever possible.

*Phytophthora* spp. are not true fungi, so not all fungicides will be effective against these pathogens. Fungicides must be specifically labeled for oomycetes. Homeowners can utilize fungicides containing phosphorus acid to protect plants from infection or suppress disease development. Commercial production fungicides include products containing cyazofamid, etridiazole, mfenoxam, or phosphorus acids. For additional information on fungicide use, please contact a local UK Cooperative Extension Service agent. Always follow label directions when utilizing fungicides.

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**Happy Retirement**

After 20+ years of working for the Harrison County Extension Service, Evonne Blackburn has decided to retire!

Although we cannot have a public celebration at this time, if you would like to wish her well via card, phone call, etc., feel free to do so!

Her last day will be Friday, May 15th.

We would like to thank Evonne for her dedication to the Extension Service over the years and wish her well in her retirement!
Making a Difference, One Peel at a Time

By: Johnnie Riley Davis, Marshall County Extension Master Gardener

Yes, there is a reason why we should all be composting. According to the EPA, 30-40% of all available food in the US is wasted. Over one fifth of discarded material in landfills is believed to be food. Sadly, the third largest human related methane emission is from landfills.

One of the simplest ways for private citizens to make a difference is to set up a compost system in their home. First decide where you want to place your compost. It should be away from your vegetable garden or water well. The preferred location should be in the shade on a flat surface not prone to flooding. Small amounts of compost can be processed in a bin indoors.

Composting methods include cold composting where no structure is needed, and the inner temperature is low; it requires very little maintenance and takes about a year. Hot composting usually is a confined heap that gets hot enough to kill seeds and pathogens, and works faster, but needs regular turning and wetting.

Compost heaps should be made up of brown and green material. The browns are the carbon part of the mixture, and greens add nitrogen. The ratio should be 25-parts brown to 1-part green. Browns include yard debris of less than 1 inch, straw, brown leaves, sawdust and newspaper. Greens are grass clippings, eggshells, coffee grounds, vegetable and fruit peels, and herbivorous animal manure (rabbit, cow, sheep, chicken, and horse). Food scraps may be stored in a container near the kitchen sink to routinely add.

Items that should not be added to compost include meat, fish, bones, fat, dairy products, chemically treated yard trimmings, plant debris that is disease or insect infested, ash, pressure treated wood, slick paper, pine needles, and thorny trimmings.

Two clues to a problem with your compost heap are an ammonia smell which indicates the need for more browns, or a rotten egg smell that is telling you to reduce moisture and turn for more air.

About a year after starting, it will be time to cover the heap with a piece of terra cloth and let it rest a few weeks. Using a framed screen, sift over a wheelbarrow to remove un-composted material.

Adding compost to your soil will improve aeration and drainage, improve water holding capacity, encourage a healthy root system and will add some nutrients. By composting, we all can cut down on the waste of resources, gas, time, manpower, pesticides and fertilizer that goes into producing food in this country.

Ways for consumers to help reduce food waste include: Place fresh produce in your refrigerator in clear containers making them easy to identify. Use your freezer to store extra bread, fruit or meat. Learn the difference in the terms sell by, use by, best by, and expiration date. Plan a leftover night menu each week. Do not wash berries until you are ready to eat them to prevent mold. Store fruits and vegetables in different bins. Store tomatoes, bananas, and apples by themselves to prevent natural over-ripening.
**Wheel Bugs**

By: Kara Back, Taylor County Horticulture Agent

When one studies insects he or she will quickly discover there are several beneficial insects. Yes, we all have heard of the praying mantis, but does the name wheel bug ring a bell?

Wheel bugs get their name from a cog-like wheel-like structure on their back. They are very aggressive looking and they should be, because they are a predator. Adding to that, wheel bugs belong to a group of insects called assassin bugs. The wheel bug is actually the largest assassin bug in Kentucky.

Wheel bugs feed on several soft body insects such as sawflies, aphids, brown marmorated stink bugs, moths, and caterpillars (which could be either good if the caterpillars are causing harm to your plants, or bad if you have a butterfly garden). However, sometimes there will be a few good guy casualties along the way, such as honey bees and lady beetles.

Wheel bugs can be found in fields, gardens, and in the landscape. They have one generation per year. In the fall, the female lays several dozen eggs in a cluster on a small twig of a tree or shrub. In the early spring, the eggs hatch and small red and black nymphs emerge. Don’t be scared when you see them. They will try to avoid you. However, don’t pick one up to hold it. It can deliver a painful bite. Their beak-like feeding structure enables them to pierce their insect prey.

This spring keep an eye out for these amazing insects. You just may have a few protecting your vegetable garden and you didn’t even know it.

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**Kale and Cauliflower Salad**

- 1 15-ounce can chickpeas, drained and patted dry
- 1 tablespoon olive oil
- 4 cups finely chopped kale
- 4 cups (1 large head) finely chopped cauliflower
- 2 tablespoons diced red onion
- ½ cup roasted sunflower seeds
- ½ cup dried cranberries

**Dressing:**
- 1 clove garlic, minced
- 4 tablespoons olive oil
- 1 tablespoon lemon juice
- 1 tablespoon Dijon mustard
- 2 teaspoons sugar
- ½ teaspoon ground black pepper

Pre-heat oven to 400 degrees F. **Toss** chickpeas with olive oil and **spread** on baking sheet. **Roast** 20 minutes, **stirring** once and then let **cool. Combine** kale, cauliflower, onion, sunflower seeds, cranberries, and cooled chickpeas in a large bowl. In a small bowl **whisk** together dressing ingredients until combined. **Pour** dressing over salad ingredients and **toss** to combine.

**Yield:** 10, 1-cup servings

**Nutritional Analysis:** 200 calories, 11g total fat, 1.5g saturated fat, 0mg cholesterol, 200mg sodium, 22g total carbohydrate, 5g fiber, 9g total sugars, 1g added sugars, 6g protein