KPOV – *The Point*
Gardening: Get Good at It
"Is There a Fungus Among Us?"
May 15, 2018

Is there a fungus among us? Rockabilly songs and movie jokes aside, the answer is always an emphatic "Yes!" It's estimated there are 1.5 million fungal species worldwide. They are everywhere and the good news is the beneficial ones are critical to the health of our soil and consequently of our plants. These fungi and plants have a symbiotic relationship. Fungi absorb sugars and other nutrients from plant roots. They also absorb water and minerals from the soil which they give back to the plant. It's a win-win for fungi and plants alike. That's why the indiscriminate use of fungicides is never a good idea.

Unfortunately, *destructive* fungi are the major source of plant disease. They secrete digestive enzymes that invade living plant tissue and dissolve cells to absorb nutrients. Typically, this invasion goes undetected until the fungus begins to reproduce or the plant reacts to it.

Fungi can invade a plant in several ways. Air-borne fungi are the most common. While fungi problems on leaves, flowers and fruit can significantly weaken a plant by causing it to, say, lose too many leaves and become stressed, attacks on stems can be life-threatening because the fungus plugs the plant's vascular system.

Soil-borne fungi, the second most common cause of fungal disease, are deadly when they assault plant roots and rot them. It's hard to detect this underground activity until your plant shows aboveground symptoms such as slowed growth, yellowing leaves or dead leaf margins.

Wood-destroying fungi are another serious threat. These live inside tree trunks, eating the wood and killing the tree from the inside out. These pathogens enter tree tissue through mechanical wounds, damaged roots, or through help from insects and birds. Often the first sign of the disease are conks or mushrooms on the side of the tree or at its base.

There are various ways to treat fungal diseases but the best approach is to do everything you can to avoid having the problem to begin with. Let's revisit botany's Disease Triangle. Diseases result from simultaneous interactions between three Triangle components: first, the plant;

second, environmental components that stress it and make it a susceptible host to disease; and third, a pathogen.

We can't control the ubiquitous pathogens, but we can do several things to keep our plants from becoming susceptible hosts. First and foremost, sanitize your garden by removing diseased leaves and branches immediately and placing them in the garbage, not your personal or municipal compost pile. If you are reusing planting containers, sanitize them with water and bleach and hot soapy water. Other steps include mulching to prevent water splash, ensuring sufficient air flow around and within plants, giving them the appropriate amount of water and good drainage and selecting disease-resistant cultivars. Additional steps to avoid soil-borne fungal diseases include enhancing the health of your soil with good compost and rotating where you plant the same annuals, vegetables or bulbs year after year.

Thankfully, only 20% of plant problems are the result of living organisms such as fungi. But being alert to how they infect plants is always a good gardening practice.

For more information on this or any other gardening topic, call the Master Gardeners at 541-548-6088 or go to our website www.gocomga.com and click on the KPOV tab on the orange bar. This has been Gardening: Get Good at It on KPOV, The Point.

Resources:

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Herwick, J.S. "Why Santize? Spring Cleaning Your Containers." Penn State Extension ***https://philadelphiacountymastergardeners.blogspot.com/2012/02/why-sanitize-spring-cleaning-your.html*** (May 2018)

Pscheidt, Jay W. "Plant Disease." *Sustainable Gardening: The Oregon-Washington Master Gardening Handbook.* EM 8742. Reprinted October 2008.