

Plant Fungal Diseases

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Plant diseases are generally defined as disorders in plants caused by pathogens like fungi, bacteria and viruses. However, environmental factors such as the excess or lack of water, fertilizer, and light can also affect plant health by producing symptoms of disease. Diseases caused by pathogens can spread to other plants. Disease-like symptoms caused by environment factors alone are not transmitted from plant to plant. However, environmental factors may make the plant more susceptible to attack by pathogens.

The most common cause of plant disease is fungi. Of the 100,000 known species of fungi, more than 10,000 can cause disease in plants. It is important to note that most fungi are beneficial to the soil environment and aid in the decomposition of toxins and decaying plant matter. Some of the most common fungal disease symptoms are mold, mildew and rust. Fungi usually reproduce through the production of spores which are dispersed by wind or water.

Phytophthora is a fungal-like organism that is responsible for causing root rot in many trees, ornamentals and shrubs. *Fusarium oxysporum* and *Verticillium dahliae* are two fungi responsible for vascular wilts. Many hybrid tomatoes have been bred to be resistant to these fungi and carry the initials VF after their names to reflect this resistance. Thus, one strategy for dealing with fungal problems is to purchase disease resistant plants.

Powdery mildew is a white powdery fungus that leaves spots on leaf surfaces. Leaves turn yellow and brown and fall off, and leaf shoots twist and distort. Powdery mildew is commonly found on crape myrtle and apple trees, grape vines, and rose bushes. Moist conditions actually inhibit the growth of powdery mildew spores, which thrive in temperatures between 60 and 80 degrees Fahrenheit and in shade. To prevent this fungus, place plants in sunny locations, provide good air circulation and reduce lush foliage by avoiding the application of fertilizer that is high in nitrogen.

Most fungal diseases, aside from powdery mildew, prefer moist conditions. Rust fungus manifests itself by small orange pustules on the undersides of leaves. Leaves discolor and drop off. Rust is often seen on roses and hollyhocks. Prevent rust by avoiding overhead watering and by using a fungicide. Control rust by pruning off affected leaves and throwing them in the trash, not the compost pile. Black spot is a fungus that spreads on the tops of leaves and is often found on rose leaves. Prevent it by watering only in the early morning, prune to encourage good air circulation, and throw away infected leaves and stems. Anthracnose is apparent through red, brown and purple leaf spots and can become a problem in some species of trees in rainy spring seasons. To control anthracnose, plant trees with plenty of space to grow and prune them to maximize air circulation which help dry leaf surfaces faster. Symptoms of amillaria root rot/ oak root fungus are wilted leaves and a general decline that starts on one side of the plant and

moves to the other side. You may also notice a strong mushroom smell. Provide good drainage and avoid over-watering to help control oak root fungus.

Avoid fungal diseases by providing an environment that inhibits the growth of the fungus. In many cases the control involves watering appropriately and providing good air circulation. Select disease resistant plant varieties when possible and especially if environmental conditions are likely to promote fungal growth. Apply fungicides if necessary, but be sure to follow all label directions carefully and heed label warnings.

On Saturday, October 13, Master Gardeners present “Propagation II”. Learn about the dividing, cutting and layering methods of propagation. The class is offered at no charge and starts at 9:00 a.m. This class will be held in the Veterans Memorial Building, 130 Placerville Dr., in Placerville.

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