

Powdery mildew a common fungal disease

Question: I've noticed a white powdery substance on several of my plants, including the roses and some of my large, established shrubs. It's on the buds and leaves, some of which are turning yellow and falling off. Can you tell me what it is and how to control it?

Answer: The white powdery substance is one of the most common plant diseases, affecting a wide variety of plants. It is called powdery mildew (surprise, surprise) and is a fungal disease. Powdery mildew diseases are caused by many different species of fungi. Some fungi attack only one or two different plants, yet some attack a wide variety of plants. Which is why so many plants are susceptible to this disease, which shows up when conditions are favorable.

SYMPTOMS

As you noticed, the fungus appears as white or grey powdery spots, typically on the top surfaces of leaves. Initially, it may look as if the plant was dusted with flour. Once established, it becomes a solid cover on leaves and buds, often spreading throughout the plant. Young foliage is most susceptible to the disease, with delicate leaves, stems, buds, and even fruit being attacked first. In addition to appearing



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as a powdery coating, the disease may also cause leaves to twist, break, or become disfigured before turning yellow and falling prematurely.

Powdery mildew fungi are host specific – each type of fungi infects only specific plants – so the mildew on your lilac is not likely to spread to roses or grapes. The fungi are obligate parasites, requiring live tissue to grow and reproduce. Because the fungus is feeding on the plant, it is taking away the plant's nutrients, which can also cause it to bloom less and become weaker. Although unattractive, the disease is rarely fatal. However, it does stress the plant and weaken it, making it more prone to other diseases and insect damage. A severe case of powdery mildew on leaves can impact photosynthesis, resulting in fewer blooms, fruit and vegetable growth. If a significant amount of leaves are lost, the plant can suffer from sunburn.

CONDITIONS

This pesky fungus thrives in warm, dry conditions, though requires fairly high humidity

around the plant. It prefers temperatures from 60 to 80 degrees Fahrenheit and shady conditions generally are the most favorable – both spring and fall are typical times for this disease to make an appearance. The moist evening air enables spore formation and low humidity during the day favors spore dispersal. The spores are sensitive to extreme heat and direct sunlight, so it is less likely to show up during summer. The fungi spores over the winter in plant debris and begin producing more spores in spring. They are then carried to plants by wind, insects, and splashing water. Periods of dampness or high humidity will encourage its growth. And crowded plantings where air circulation is poor and plants remain wet are favored by the fungi.

PREVENTION AND TREATMENT

Now that we know what it is, what can we do about it? The best defense is to not give it conditions to take hold. Make sure there is good air circulation in and around plants by pruning and thinning. Don't water from above as this will spread the spores (although hard to prevent if it's raining) and clean up debris so the fungus doesn't have a place to overwinter. If the disease appears, remove infected

leaves or cut back portions of the plant that have the mildew, making sure to not compost the trimmings. And because the fungus prefers young foliage, delay fertilizing until the fungus is gone.

However, sometimes infected plants need a more aggressive approach and this is where fungicides can be helpful. Effective organic fungicides include horticultural oils, neem oil, sulfur and potassium bicarbonate. Before applying always check the label to make sure it is safe

and effective on the type of plant you are treating. Or you may prefer to make your own bicarbonate solution by mixing 1 gallon of water with 1 tablespoon baking soda and 1 teaspoon liquid dish soap. Spray all leaf surfaces, even those that do not appear to be infected, and reapply weekly until conditions improve.

Powdery mildew is an annoying garden disease to battle, so when considering new plants choose healthy ones and prevent them from getting

stressed. In addition, look for cultivars that are resistant to the disease.

Do you have a gardening question? Please e-mail, call, or visit the Douglas County Master Gardeners Plant Clinic at douglasmg@oregonstate.edu, 541-236-3052, or 1134 S.E. Douglas Ave., Roseburg. Douglas County Master Gardeners are trained volunteers who help the OSU Extension Service serve the people of Douglas County.