

Use disease-resistant plants

Consider replacing the most mildew-prone plants with other plants that are less susceptible.

Resistant plants have thicker leaves or produce compounds to defeat the fungus.

Plant breeders use these traits to develop new 'disease resistant' cultivars.



Many grape varieties are "least susceptible" to powdery mildew (picture above). These varieties include Pinot gris and many table grapes. In late summer, the mature leaves and fruit become resistant to disease infection. In the home garden, powdery mildew does not directly affect most vegetables. Late summer infection can be ignored on foliage of zucchini and pumpkins (picture below).



Kelowna's Pesticide Bylaw

Pesticide Regulation Bylaw No. 9920

The City of Kelowna Pesticide Bylaw regulates the use of pesticides for non-essential (cosmetic) purposes.

Pesticides are products used to control unwanted weeds, fungi and insects. Under the Pesticide Bylaw, most pesticides *cannot* be applied on a residential property.

Least-toxic pesticides on the "excluded list" are exempt from the restrictions of the Bylaw. Certified pesticide applicators are also exempt from the restrictions of the bylaw.

To view the entire bylaw and pesticides on the "excluded list", refer to www.kelowna.ca under residents / environment / pesticides.



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Managing powdery mildew

This information sheet provides tips to manage powdery mildew on residential plants, while minimizing the use of pesticides.



Powdery mildew is one of the most common and visible plant disease.

Many plants can be infected, including vegetables, fruit trees and flowers, and even grasses. Around the world, it causes more crop damage than any other disease.

What is powdery mildew?

Powdery mildew is a plant disease caused by a fungus.

When weather conditions are favourable, microscopic spores are released and carried by wind. Spores landing on foliage can start a new infection. The cycle takes only a few days and is repeated many times, leading to explosive epidemics.

Powdery mildew is favoured by warm and humid weather. It does not require rainfall like other diseases.



Powdery mildew grows on green plant surfaces. The disease usually starts as white spots or netlike white growth on younger foliage (picture above). Older leaves become covered in white to gray patches. Severe infection may cause distortion of new growth and scars on fruit.

Powdery mildew is favoured by warm dry days and cool humid nights. Disease development occurs at daytime temperatures from 10 to 30°C, but is most rapid near 25°C with cool nights near 15°C. Development stops above 32 to 35°C.

The pathogen survives by feeding on plant nutrients. It sends a structure into the plant cells, diverting water and food to the fungus.

Tips to manage powdery mildew

Look for indications of early infestations which are easier to manage.

The fungus requires live tissue to survive. Manually remove and discard the infected leaves. However, air-borne spores can still arrive from other plants found near by.

Wash the leaves with water during midday.

Fungus spores are dispersed by air currents in greatest numbers from morning to midday. Overhead irrigation at this time will “wash away” many spores before they infect the plant. Ensure the foliage is dry before night.

Avoid excessive fertilization.

Conditions that favour excessive plant growth also favour powdery mildew. Avoid unnecessary new growth from fertilization, irrigation or summer pruning.

Provide proper growing conditions.

Place mildew-susceptible plants in a sunny location. Irrigate these plants during drought periods to prevent stress. Avoid overcrowding plants. Prune lightly to open the canopy and provide good air circulation.



Remove infected stems during winter pruning.

During winter, the fungus is visible as white masses on twigs and branches, especially on rose bushes (picture to left).

Prune and discard these stems.

About using pesticides

The following are least-toxic pesticides that are on the “excluded list” and are exempt from the restrictions of the Pesticide Bylaw. They are available at most garden centers.

Sulphur

Use during the growing season to prevent further infection. Apply at the first sign of disease and plan repeat applications. Cover all plant parts. To prevent leaf damage, avoid spraying when temperatures are above 27°C.

Lime sulphur

Use lime sulphur in late winter on plants with severe mildew the year before. Spray to run-off. Lime sulphur can stain sidewalks and walls.

Apply these “excluded” pesticides only when necessary. Read the label for registered uses and precautions.. Wear gloves, minimize skin contact and spray only the affected plants.



Spraying must be done at the very start of infection (leaf on left). Spraying does not help once the plant infection is extensive (leaf on right).

Seek help for severe disease problems.

Powdery mildew becomes a concern on highly susceptible plants, when it stunts plant growth, or when it affects large trees. For the best course of action, consult with a garden center or a certified pesticide applicator.