



# Rockin E Gardening Handouts

*Tips and Suggestions for 'Year-Round' Gardening*

1201 West 500 South Woods Cross, UT

www.RockinEcountrystores.com

801-299-9990

## Powdery Mildew

Powdery mildew is a common fungus disease in our area. It seems to spring up overnight. It attacks a wide variety of plants; vegetables, flowers, ornamental trees, fruit trees, grape vines, shade trees, shrubs, lawns, and even houseplants. Powdery mildew does not require moist conditions to establish and grow, in fact, it does very well in warm, dry weather. Powdery Mildew is one of the most widespread, easily recognized, leaf-infecting diseases in Utah's hot, dry, summer and fall conditions. Fortunately, powdery mildew is fairly easy to prevent, but it is often hard to cure.



### Symptoms

Powdery mildew first appears as a white powdery spot on leaves. In its early stages, powdery mildew looks like hard-water deposits. However, the fungus can make the leaves twist, buckle, distort, and even turn yellow and die in just a short period of time. In severe cases, powdery mildew can reduce yields, shorten ripening time, distort the flowers, and ruin fruits and vegetables.



Some plants can tolerate this fungus and continue to thrive, while others can be severely injured even by a minimal infection.

Powdery mildew symptoms on tomatoes, peppers, onions, and other plants can be very different. On some plants, the fungus produces yellow patches instead of the traditional powdery, white patches.

### Spread

Powdery mildew spores can be spread very easily. The spores are blown in the slightest breezes, and can spread during rainstorms. They can also be spread on a person's hands, skin, insects, birds, pets and on clothing.



Powdery Mildew usually occurs when the days are warm and the nights are cool (65-75 degrees F.), with a relative humidity of 50% - 90% during the night. These conditions usually occur during the late-spring and early-fall weather. Watering in the late-afternoon, or in the evening, can also help create the ideal relative humidity conditions needed for Powdery Mildew to develop.

### Cultural controls

The best method of control for powdery mildew is prevention. One of the best forms of prevention is to plant varieties that are the least susceptible to the disease. Powdery mildew can infect most plants but some are more susceptible than others. However, this method of planting resistant varieties, may eliminate some of your favorite fruits, vegetables and flowers. The



susceptible types of plants include most squash, cucumbers, pumpkins, melons, roses, grapes, apples, crabapples, African violets, gerbera daisies, zinnias, and even marigolds.

Other preventative controls include planting (susceptible varieties of plants) in full sun, avoiding excess fertilization, and not using overhead sprinklers. However, the water from overhead sprinklers (applied at the correct time) may actually wash some of the spores off the leaves. Try not to water in the late evening or night, to help keep the relative humidity lower during the cool, nighttime temperatures.

Don't crowd plants. Give them plenty of space for good air circulation. Keep planting beds free of weeds; they could reduce air circulation and increase humidity.

During the winter, this fungus survives on infected plant parts and in debris, such as fallen leaves. Clean up and remove plant debris at the end of the growing season to remove overwintering sites for fungi

### Chemical Controls

#### *Preventative fungicides:*

**Apply protective, preventative fungicides before the disease actually appears,** or in the very early stages of development. Be sure to treat the highly susceptible plants on a regular basis to prevent this disease. Treat other plants, as needed, if conditions are right for powdery mildew to start developing. Generally, a fungicide applied once a month is a good way to prevent the disease. Once the disease is apparent, you will need to spray more frequently. Some of the common preventative fungicides include:



- |  |          |
|--|----------|
| Horticultural Oil                                    | Daconil  |
| Wilt Pruf  | Bayleton |
| Neem Oil   | Banner   |
| Sulfur   | Eagle    |
| Copper   |          |
| Revitalize Bio fungicide                             |          |
| Bicarbonate of Soda                                  |          |
| 'All in One Rose Care' (do not use on edible plants) |          |



## Curative Fungicides:

Once you notice a large mass of white powdery spots on the leaves, the preventative stage is past and you must concentrate on the curative procedures.

Curative procedures include removing infected leaves and stems. Once leaves are completely covered with powdery mildew, chemical controls will no longer be effective - completely remove those leaves and stems.

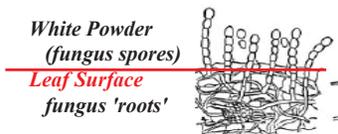
You may need to remove the entire plant. It is sometimes easier (and cheaper) to remove an entire plant rather than trying to treat this disease, especially in annual flowers and vegetables (squash, cucumbers, zinnias, etc.)

Another curative procedure is washing off the spores with water, if possible. The organism, oddly enough, can be partially kept under control by being washed off occasionally. It won't completely go away, nor will water end the infection, it simply seems to help reduce the problem.

The final curative procedure is spraying the entire plant with a fungicide. This is especially important for perennial flowers, shrubs, and trees. You need to control the disease -this year- to help prevent the disease from returning -next year-. Remember, remove and discard all infected leaves in the fall. Do not leave them in the garden, or put them in a compost pile.

Most curative fungicides will need to be applied every 2 weeks, for at least 1 to 2 months. Some of the most common curative fungicides include:

**Horticultural Oil**  
**Neem Oil**  
**Bicarbonate of Soda**  
**Fungonil**  
**Daconil**  
**Fertilome Systemic Fungicide**  
**Bayleton**  
**Eagle Fungicide**



## Which Chemicals for Which Plants ???

Some chemicals are systemic, which means they are absorbed by the plant and moved through the plant internally. Systemic fungicides usually last longer than other types of fungicides, giving a better prevention and control of powdery mildew. Generally speaking, do not use a systemic fungicide on edible plants.

### Common Systemic Fungicides

**Fertilome Systemic Fungicide (Propiconazole)**  
**Bayer Disease Control (Tebuconazole)**  
**Bonide Infuse (Propiconazole)**

Some chemicals are contact fungicides, which means they only protect the surface of the leaf. They generally do not last as long as systemic fungicides, and they can be washed off easily with rain or sprinkler irrigation. Contact fungicides need to be re-applied more frequently than systemic fungicides. The following contact fungicides are generally safe for all plants, including many edible plants.

### Common Contact Fungicides

**Bonide Fungonil (Daconil)**  
**Fertilome Broad Spectrum Fungicide (Daconil)**  
**Garden Tech Daconil Fungicide**

**Spectracide Immunox (Myclobutanil - Eagle)**

**Fertilome F Stop (Myclobutanil - Eagle)**

**Neem Oil**

**Captan**

**Revitalize Bio Fungicide** - *Revitalize is an organic fungicide. It is a bacteria that helps prevent the powdery mildew spores from infecting the plants. Serenade is non toxic to people, pets, and beneficial insects. It can be applied up to and including day of harvest.*

**Monterey Garden Phos**

**Copper Soap**

**Sulfur**

**Consan**

**Bi Carbonate of Soda (baking soda)**

*This is a link to a PDF handout about how and when to use baking soda to control powdery mildew. It is very informative.* <http://https://attra.ncat.org/product/use-of-baking-soda-as-a-fungicide/>



## Powdery Mildew In Lawns

If your lawn looks like it has been dusted with flour, it probably has powdery mildew. The lawn, under the white mildew, may turn yellow, then brown, and in severe cases, may actually die.

Powdery Mildew in lawns usually occurs when the nights are cool (65-75 degrees F.) and the days are warm with a relative humidity during the night of 50-90%. Those conditions are usually met during the spring and fall weather. However, lawns in shady areas are susceptible year round. Try not to water in the late afternoon or evening.

Use the same preventative and curative procedures in the lawn as you do for your vegetables and flowers. Lawn mowers spread powdery mildew, so be extra careful when the disease is present.

## Precautions

Be careful using oils. Never apply an oil spray within 2 weeks of a sulfur spray. Do not apply oil when the temperatures may be above 90 degrees F within the next few hours. Do not apply oil when the plant is wilting due to dry or hot conditions.

Sulfur can damage some plants, such as squash and melons. Do not apply sulfur when the temperature will be above 90 degrees F. for 12 hours.

Copper is only marginally effective against powdery mildew.

## Important Note on the Use of Fungicides

*Please note that almost all pesticides, including fungicides, are formulated for specific uses and conditions. When applied incorrectly, pesticides can cause ill health to animals and humans, or damage to plants.*

*When using any kind of pesticide, or chemical treatment, always check the label for directions and apply as indicated on the product label. If a little works good, a little extra does not work even better.*



### More Information About Powdery Mildew

<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7493.html>

<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7406.html>

<https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1033.pdf>

[https://utahpests.usu.edu/ipm/notes\\_orn/list-flowers/powdery-mildew](https://utahpests.usu.edu/ipm/notes_orn/list-flowers/powdery-mildew)

<https://utahpests.usu.edu/ipm/ornamental-pest-guide/diseases/powdery-mildew>