



Home Lawn and Garden

# Black Rot on Grapes

Posted: August 17, 2015

Weather conditions this year have been exceptionally favorable for black rot, and many home gardeners are having problems with it. Even if you are following the cultural control recommendations (proper pruning and removing diseased plant material from the vineyard), the disease may be ruining your grape harvest. If so, consider using a fungicide starting early next spring to protect your fruit.

## Black Rot

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Black rot is one of the most serious diseases of grapes in the eastern United States. Crop losses can range from 5 to 80 percent, depending on the amount of disease in the vineyard, the weather, and variety susceptibility. The fungus *Guignardia bidwelli* can infect all green parts of the vine. Most damaging is the effect on fruit. Later fruit infections can destroy many grapes, even the entire crop.



## Symptoms

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Infected leaves develop reddish-brown, circular spots (lesions) on the upper leaf surface. As the lesions mature, the center becomes brown and small, black, pimple-like fruiting bodies called pycnidia appear in the center. They are usually arranged in a loose ring just inside a dark border. Infected berries become dark brown and are covered with numerous black pycnidia on the surface. The berries eventually shrivel into hard, black mummies. Most serious fruit infections occur when the grape is pea sized or larger.

## Disease Cycle

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The black rot fungus overwinters in mummified fruit on the vineyard floor or in old fruit clusters that hang in the vines. The fungus can also overwinter within cane lesions. Spores of the fungus are

produced within the diseased fruit and infect leaves, blossoms, and young fruit during spring rains. Fruit infections occur from mid-bloom until the berries begins to color. Mature leaves and ripe fruit are not susceptible. Very few fruit or leaves are infected after late July, and none are infected after the end of August. Black rot infections depend on the temperature and the length of time the leaves are wet. Infections occur if susceptible tissue remains wet for a sufficient length of time, depending on temperature (see table below).

Hours of leaf wetness required for a black rot infection period at various temperatures following a rain.

\*Average temperature over the wetting period.

\*\*Begin counting when the leaves first become wet; stop counting when the leaves have dried off.

Temperature (°F)*	Hours of Leaf Wetness**
50	24
55	12
60	9
65	8
70	7
75	7
80	6
85	9
90	12

## Disease Management

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Infected prunings and mummified berries should be removed, burned, and/or buried in the soil before new growth begins in the spring. In vineyards with susceptible varieties or where black rot was a problem the previous year, early season fungicide sprays should be timed to prevent the earliest infections. Should infections become numerous, protecting against fruit rot is very difficult later in the growing season. Planting resistant varieties is strongly suggested.

[Wine grape varieties for Pennsylvania \[http://extension.psu.edu/plants/gardening/fphg/tables/Table6-3.pdf\]](http://extension.psu.edu/plants/gardening/fphg/tables/Table6-3.pdf)

[Table and juice grape varieties for Pennsylvania \[http://extension.psu.edu/plants/gardening/fphg/tables/Table6-4.pdf\]](http://extension.psu.edu/plants/gardening/fphg/tables/Table6-4.pdf)

Below are two tables with information: one on the effectiveness of different fungicides and one

showing a standard spray schedule for disease control. Note that this includes sprays very early in the season—even before the blooms are open.

### Efficacy of pesticides for grape disease control

Always consult the label before making pesticide applications. Labels vary greatly among commercial products of the same material. It is important to refer to the label for the best timing and application rates when applying pesticides. Also read the text for information on cultural practices to minimize the application of pesticides.

**Diseases:** **P** = Phomopsis **PM** = powdery mildew **BR** = black rot **BO** = Botrytis rot  
**DM** = downy mildew

Fungicides	P	BR	DM	PM	BO
Captan	1	1	3	4	1
Copper	2	2	2	1	3
Maneb	1	1	1	4	4
Mancozeb	1	1	1	4	4
Mycobutanil	4	1	4	1	4
Neem Oil	4	4	4	4	4
Sulfur	3	3	3	1	3

### Pesticide recommendations for grapes

The sprays listed below will not provide adequate control of black rot. Where black rot is a problem, apply a fungicide every 14 days after the “New Shoot” spray up to and including the “Before Ripening” spray. During long rainy periods, shorten the interval to 7 to 10 days between sprays. Spray in the rain, if necessary, to maintain the schedule of applications. Always consult the label before making pesticide applications. Labels vary greatly among commercial products of the same material. It is important to refer to the label for the best timing and application rates when applying pesticides. Also read the text for information on cultural practices to minimize the application of pesticides. Due to a wide array of various products containing the same active ingredient, for insecticide recommendations, when appropriate, the active ingredient is listed instead of the name of formulated product. Follow all instructions and application rates listed on pesticide labels.

Time to Spray	Suggested Materials	Pests to Be Controlled
New Shoot—when new shoot growth averages 4 inches	Captan plus Mycobutanil or Mancozeb + Mycobutanil	Phomopsis-black rot
Before Bloom—just before blossoms open	Captan plus Mycobutanil or Mancozeb + Mycobutanil or Carbaryl or Imidcloprid	Black rot-downy mildew-rose chafer-leafhopper
Post-Bloom—immediately after Bloom	Mancozeb + Mycobutanil or Bacillus thuringiensis or Imidacloprid or	Black rot-downy and powdery mildew-botrytis rot-berry moth-leafhopper

<b>Time to Spray</b>	<b>Suggested Materials</b>	<b>Pests to Be Controlled</b>
	Azadirachtin	
First Cover—apply 10 days after Post-Bloom	Captan + Sulfur Same as Post-Bloom	Black rot-downy and powdery mildew-botrytis rot-Japanese beetle
Second Cover—apply 3 weeks after First Cover	Captan + Sulfur	Black rot-downy and powdery mildew-Fruit rots
Third Cover—late July or early August	Captan + Sulfur	Fruit rots-powdery mildew
Before Ripening—10 days before picking	Captan + Sulfur	Fruit rots-powdery mildew

## What to do if you have black rot

While you do have the option to start spraying a fungicide now to try to slow down disease progression, at this point in the season, it probably won't help much in salvaging the rest of the fruit for this year. However, taking the time to remove as much of the infected material this year as you can will make a big difference. Then start in with a good spray program early next year and you should be able to get good disease control.

[Tables and information from the \*Fruit Production for the Home Gardener\* guide.](#)

[\[http://extension.psu.edu/plants/gardening/fphg\]](http://extension.psu.edu/plants/gardening/fphg)

[Do Your Grapes Suffer From Black Rot? \[http://extension.psu.edu/washington/news/2011/do-your-grapes-suffer-from-black-rot\]](http://extension.psu.edu/washington/news/2011/do-your-grapes-suffer-from-black-rot)

## Contact Information



**Lee Stivers**

**Extension Educator**

Email: [ljs32@psu.edu](mailto:ljs32@psu.edu)

Phone: 724-228-6881

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