A2129

Grape pest management for home gardeners

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Grapevines can grow in many areas in Wisconsin. Grapes are susceptible to a number of insect and disease pests. These must be managed to produce quality crops and to ensure survival of the vines. This bulletin is a companion to Extension publication *Growing Grapes in Wisconsin* (A1656), which describes pests and cultural practices in greater detail.

Chemical pesticides may be a part of a well-managed home vineyard. However, they are only one tool in the overall management scheme. Other management practices such as pruning, fertilizing, irrigating, and choosing appropriate plant materials are equally important to the health of the vineyard. Grapes must be pruned every year. Pesticides won't compensate for poor management practices or inappropriate cultivars.

Disease management

Black rot can affect all succulent new growth. Symptoms first appear on leaves and stems as tan, circular to irregularly shaped spots. Tiny black fruiting bodies usually are visible in the center of the lesions. On berries, lesions first appear as small, white spots with red-brown margins. Berries eventually brown and then shrivel, turning dry and black. To prevent new infections, bury shriveled berries in the fall or before budbreak in the spring. Treat every 7–10 days from early spring until just before blossoms open.

Downy mildew causes chlorotic, yellowish areas on the upper surfaces of leaves. The corresponding areas on the lower surface are covered with a white, cottony growth. Spray with captan or fixed copper every 10 days after the final spray in the suggested guide until 7 days before harvest.

Insect management

Cutworms occasionally cause serious damage early in the season by cutting off the new developing canes. Damage is usually more common in weedy areas, and weed control reduces the likelihood of cutworm injury. Cutworms remain hidden during the day and may be difficult to find. If troublesome, use carbaryl bait.

Grape berry moth larvae are probably the most important grape pest in Wisconsin. The larvae spin webbing on the flower or fruit cluster where they are feeding. Feeding damage causes fruit to shrivel or drop. Examine flower clusters about 5 days before first bloom. Treat if larvae are found. Immediately after bloom, inspect fruit clusters for webbing, damaged berries, and larvae. Inspect weekly beginning in early August for injury from the summer generation.

Grape phylloxera are tiny aphid-like insects that cause small, round growths on the foliage. They are an occasional problem in some grape plantings. For adequate control, at the first sign of leaf galls apply carbaryl twice, 7–10 days apart.

Japanese beetles are ⅓-inch long, metallic green and reddish beetles with white tufts of hair around the edge of their reddish wing covers. From late June to early August, adults feed on leaves of hundreds of species of plants. Defoliation of more than 10%, especially once fruit begins to form, will hurt yield. Insecticides such as those listed in this publication will kill the adults present, but others may rapidly invade. Traps are available, but because they attract beetles into your garden, their benefit has not been proven. If you use traps, place them at least 50 feet away from plants you wish to protect. For small plantings, floating row covers will protect plants from the beetles; they should be put in place just after blossoms have fallen to allow pollination.

Spider mites can damage grape leaves during prolonged periods of warm, dry weather. These tiny pests feed on the undersides of leaves in a fine network of webbing. Feeding can cause leaves to yellow and wither, reducing vine vigor and interfering with berry ripening. Infestations frequently start on other plants growing nearby. Treat with insecticidal soap to control mites. For heavy infestations, you may need to apply a second spray 5–7 days after the first.

Weed management

Weeds or other vegetation are not typically thought of as pests, but they may reduce yields and fruit quality by competing for light, water, and nutrients, and they may also harbor insect or disease pests. Keep a vegetation-free area of 2–3 feet in radius around each vine.

Vegetation may be controlled either mechanically or chemically. Mechanical methods include shallow (1–2 inches) cultivation every few weeks with a sharp hoe or shovel, being careful not to damage the trunk or roots. A mulch of shredded leaves, wood chips, sawdust, straw, or other organic materials that will stop weeds may also be used. Do not mound

mulches up around the vine. Instead, apply them in a "donut" fashion around the vine. Mulches need to be renewed each year to remain effective.

Chemical weed control is not recommended for grapes because of the danger of vine and fruit injury. Do not use herbicides containing 2,4-D or 2,4,5-T near grapevines. These chemicals will damage foliage and reduce production. Symptoms of such damage are elongated terminal growth, downward cupping of old leaves, and fan-shaped growth of new leaves.

Spraying tips

- When spraying, cover plants thoroughly with any of the suggested materials for maximum benefit.
- Do not apply the following materials to grapes within the specified period before harvest:

carbaryl	1 day
imidan	14 days
malathion	3 days
methoxychlor	14 days

- **Mix fungicides and insecticides together and apply at one time.** However, if using hydrated lime, apply it separately. Do not use captan in the same spray with either lime or copper materials.

References to pesticide products in this publication are for your convenience and are not an endorsement of one product over other similar products. You are responsible for using pesticides according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from chemical exposure. Failure to do so violates the law.

Suggested spray schedule

When to spray	Pests	Material per gallon water*
When new shoots are 4–8 inches long	**Diseases** black rot, phomopsis cane and leaf spot	2 tbsp captan[1] 50% WP or 1 tbsp ferbam
Just before blossoms open	**Diseases** black rot	Same as above
	Insects leafhoppers, rose chafer, flea beetle	3 tbsp Imidan 12.5% WP, or 2 tbsp carbaryl (Sevin) 50% WP, or 2 tbsp methoxychlor 50% WP **plus** 2 tbsp malathion 25% WP
Bloom	**Insects** *Do not apply insecticide during bloom. Protect pollinator insects.*	
Just after blossoms have fallen	**Diseases** downy mildew	2 tbsp captan[1] 50% WP, or fixed copper fungicide[2] 45–53%
	powdery mildew	6 tbsp wettable sulfur[3]
	Insects berry moth, leafhoppers, Japanese beetle, rose chafer	3 tbsp Imidan 12.5% WP, or 2 tbsp carbaryl (Sevin) 50% WP, or 2 tbsp methoxychlor 50% WP
When berries begin to touch in the cluster or are about the size of peas	**Diseases** downy mildew **Insects** berry moth, leafhoppers	Same as just after blossoms have fallen

*tbsp = level tablespoon, WP = wettable powder.

[1]Captan has a 4-day re-entry period. Some all-purpose fruit sprays containing captan may have different restrictions. Follow label directions.

[2]Commercial formulations vary. Use the amount specified on the product label.

[3]Do not apply sulfur on days when temperatures are expected to be greater than 85°F. Certain grape cultivars are sensitive to sulfur; check product labels.

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