Diseases

Fruit Rots

Black Rot (*Guignardia bidwellii*): This is probably the most damaging grape disease in New England. Most loss is caused by damage to the berries, though leaves, tendrils and new shoots are also damaged. The fruit is susceptible from fruit set until veraison; resistance increases from pea-size to veraison.

This disease is caused by a fungus which overwinters in mummified berries and stem lesions. Mummies on the soil surface release spores when rain soaks them in the spring. There is a continuous production of spores throughout the spring and summer. These are carried to new plants by wind. Young tissue is infected in less than 12 hours between 60½ - 90½F. Spores germinate and produce mycelium resulting in symptoms in 8 to 25 days, depending on the weather. New leaves and half-grown berries are most susceptible. Secondary infections occur when new spores are produced on the current year's infections. Secondary spores are produced into August, and are spread by splashing rain.

On leaves, infections appear as yellowish-tan spots in late spring. These spots enlarge and become reddish-brown with a dark outline. Lesions are roughly circular in shape. Shoots develop sunken, elliptical lesions, black in color up to 2 cm in length. On the berry, symptoms do not appear until the fruit is half grown. Lesions start as a small whitish dot and quickly engulf the whole berry. The infected area develops a reddish brown color. The berry wrinkles and blackens completely within a few days. These fruit become mummies that are very hard and stony, and supply inoculum for the following year.

Management: Sanitation is very important. Destroy all mummies and canes with lesions. Remove infected tendrils from vines. Plant grapes in locations having good air circulation, taking advantage of prevailing winds and sun. Black rot is more likely to occur near woodland borders. It occurs much more severely in wet years than in dry years. Protectant fungicides offer good control when they are applied initially when the shoots are 10-16 cm long and continued until the berries contain approximately 5% sugar. Abound,Elite, Flint, Sovran and Nova are excellent eradicant and protectant materials. Varietal resistance is another control option. See pest management schedule for recommended materials and timing.

Table 42. Grape black rot leaf wetness duration-temperature combinations necessary for grape foliar infection by black rot.

Temperature (½F)	Minimum leaf wetness duration for light infection (hr)
50	24
55	12
60	9
65	8
70	7
75	7
80	6
85	9
90	12

Bitter Rot (*Greeneria uvicola*): Bitter rot, while most common in southern grape regions, may infect grapes in New England. If 10% of the berries in a wine pressing are infected with bitter rot, the wine can be undrinkable. Bitter rot may be easily confused with black rot. Infected berries first develop brownish, water-soaked lesions. The bitter rot fungus infects ripe grapes, and unlike the black rot fungus, does not infect green berries. Bitter rot susceptibility increases right at veraison. Lesions often have concentric rings in white-fruited varieties. Berries turn brown but retain their shape. In 3 or 4 days black pustules erupt on the berry. If overripe berries become infected, they are not easily detected, because pustules do not form. These berries are the most bitter, and the most likely to be mistakenly harvested.

Warm, humid weather at the time berries ripen favors the disease. The fungus grows rapidly, and can rot berries in 5 to 7 days. Wounding promotes fungal growth.

Management: Good air circulation for good drying in the vineyard. Fungicides used for the control of some of the previously discussed diseases usually will also control bitter rot. If conditions are right for infection, late season sprays should not be omitted. Most varieties have some degree of resistance to the fungus.