

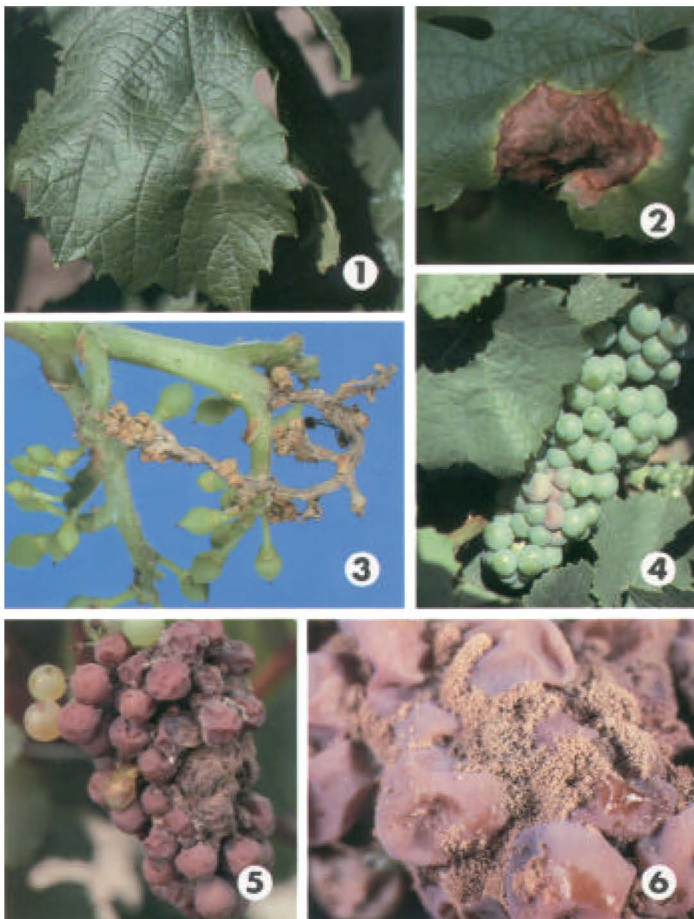
SYMPTOMS AND SIGNS

botrytis bunch rot and blight

Botrytis cinerea Pers.

INTRODUCTION

Botrytis bunch rot and blight of leaves, shoots and blossom clusters, also called gray mold, occurs throughout the viticultural world. The fungus causing the disease grows and reproduces on senescent or dead plant tissue. As a disease-causing organism, it is responsible for crop loss in a wide variety of unrelated crops. Botrytis bunch rot is especially severe in grape cultivars with tight, closely packed clusters of fruit. Botrytis is also responsible for storage losses of grapes picked for fresh market. In addition to its crop loss potential, Botrytis infection of ripe fruit of certain cultivars, combined with precise climatic conditions, results in a condition called "noble rot" and is the prized ingredient in the Auslese, Beerenauslese, and Trockenbeerenauslese wines of Germany, the Sauternes wines of France, and the Tokay wines of Hungary.



Botrytis infection of leaves begins as a dull, green spot, commonly surrounding a vein (Fig. 1), which rapidly becomes a brown necrotic lesion (Fig. 2). The fungus may also cause a blossom blight (Fig. 3) or a shoot blight, which can result in significant crop losses. Debris, i.e. dead blossom parts, in the cluster may be colonized by the fungus which can then move from berry to berry within the bunch prior to the beginning of ripening, and initiate development of an early season sour rot (Fig. 4). However, the most common phase of this disease is the infection and rot of ripening berries. This will spread rapidly throughout the cluster (Fig. 5). The berries of white cultivars become brown and shriveled and those of purple cultivars develop a reddish color. Under proper weather conditions, the fungus produces a fluffy, gray-brown growth containing spores (Fig. 6).

DISEASE CYCLE

Botrytis overwinters in debris on the vineyard floor and on the vine. The fungus produces small, dark, hard, resting structures called sclerotia. Sclerotia are resistant to adverse weather conditions and usually germinate in spring. The fungus then produces conidia, which spread the disease. Sporulation may occur on debris left on the vine during the previous growing season, such as cluster stems remaining after mechanical harvest or mummified fruit, or it may occur on sclerotia on canes. The fungus usually gains a foothold by colonizing dead tissue prior to infection of healthy tissue. Tissue injured by hail, wind, birds, or insects is readily colonized by Botrytis. Ripe berries that split because of internal pressure or because of early season infection by powdery mildew, are especially susceptible to infection by Botrytis. Botrytis conidia are usually present in the vineyard throughout the growing season. Moisture in the form of fog or dew and temperatures of 15-25 C (59-77 F) are ideal for conidia production and infection. Rainfall is not required for disease development.

CONTROL

Botrytis can be controlled by an integration of cultural practices, host factors, and applications of fungicides. Selecting open vineyard sites and orienting rows to promote good air drainage can reduce Botrytis problems. Cultural practices that improve air movement within the vineyard and specifically within the canopy help reduce the duration of wetting periods and consequently reduce disease. Practices that open the canopy and expose the clusters also aid in spray penetration and coverage of fruit. Growth regulators that lengthen the rachis and separate the berries in tight clustered cultivars can significantly reduce spread of Botrytis from berry to berry within the clus-

ter. Use of effective fungicides at appropriate times during the growing season can provide significant

control. See your local extension service for up to date control recommendations.

