

## Eutypa Dieback–*Eutypa lata*



Eutypa dieback symptoms on grape

Grape Eutypa dieback is one of the most destructive woody tissue diseases found in commercial grape production. The pathogen is the canker-and-shoot dieback phase of what was called dead-arm disease, and is a growing problem in the Midwest. It is important to note that for many years, phomopsis was thought to be the cause of dead-arm disease. Researchers discovered, in 1976, that this disease was actually caused by two fungal pathogens: phomopsis, which causes the spotting phase of the disease, and eutypa dieback.

### Symptoms

The symptoms of eutypa dieback are seldom seen in grapevines under six years old. Younger vines can be infected but will not exhibit noticeable symptoms for two to four years after infection.

#### *Vegetative*



Eutypa dieback on leaves  
(Photo courtesy of M. Ellis,  
Ohio State Univ.)

The most obvious signs for grower to look for in the field appear in the spring when healthy shoots are 12-24 inches long. Shoots growing on infected canes will appear deformed and discolored. Young leaves will appear smaller, cupped and chlorotic (yellow). They may develop small necrotic spots and tattered margins. These leaf and shoot symptoms are not as obvious later in the growing season due to healthy vigorous growth obscuring diseased growth. The leaf symptoms will become more pronounced each year until the infected portion of the vine dies.



Eutypa dieback in vine  
(Photo courtesy of M. Ellis,  
Ohio State Univ.)

The earliest symptom is a canker that develops around pruning wounds, made several years earlier, on the older wood of the main trunk. They are rather difficult to see because they are covered with bark. A flattened area may be observed on the trunk indicating the canker under the bark. Removing the bark reveals a defined discolored area of wood bordered by white, healthy wood. When the

infected wood is cut in a cross section a wedge-shaped zone of necrotic sapwood extends from the point of origin of the canker to the center of the trunk.

#### *Fruit*

The fruit of infected vines do not exhibit many symptoms. Clusters on infected shoots may have a mixture of small and large berries. This alone is not definitive proof of a eutypa dieback infection.

## **Disease Cycle**

*Eutypa lata*, the causal agent of eutypa dieback, can survive over many years in the trunks of infected living vines and dead grape wood. Eventually, reproductive structures, called perithecia, are produced on the surface of infected wood. When free water is available, as either snowmelt or rainfall, ascospores are discharged and disseminated via air currents for long distances. Spores are released in the winter and early spring, the same time vines are being pruned. The ascospores can land on the pruning wounds and germinate causing a new infection. Ascospores germinate within 11-12 hours when the temperature reaches 68-77°F (20-25°C). Symptoms develop after several growing seasons.

## **Control Strategies**

The most efficient way to control eutypa dieback is the use of good cultural practices. Eutypa dieback is viable in the field for many years. Due to this viability it is important to prune out and destroy any diseased parts from the vines or vineyard floor, during dormant season. Infected vines must be cut off below the canker or discolored wood. If the canker extends below the soil line, the entire vine should be removed to ensure removal of the pathogen. Early spring is the best time to remove infected vines. Burning or burying infected plant material will reduce overwintering inoculum in the vineyard. If possible, use only pathogen-free propagation materials or nursery stock to avoid introducing infection into the vineyard.

Currently, there are no eutypa dieback-specific fungicides, organic or conventional, available on the market.

## **References**

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