

How to Manage Pests

UC Pest Management Guidelines

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Grape

Eutypa Dieback

Pathogen: *Eutypa lata* and other fungi in the Diatrypaceae family.

(Reviewed 12/14, updated 12/14)

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SYMPTOMS

Eutypa dieback, Botryosphaeria dieback, Esca, and Phomopsis dieback make up a complex of "trunk diseases" caused by different wood-infecting fungi. Eutypa dieback delays shoot emergence in spring, and the shoots that eventually do grow have dwarfed, chlorotic leaves, sometimes with a cupped shape and/ or [tattered](#) margins. Symptomatic shoots are likely to either die back later that growing season or the spur from which they originate will die the following year. Eutypa dieback causes death of spurs, arms, cordons, canes, and sometimes the upper section of the trunk, depending on the location of the wood canker. [Wedge-shaped wood cankers](#) form in infected wood and are indistinguishable from those associated with Botryosphaeria dieback and Phomopsis dieback. Dead spurs and shoot dieback caused by Eutypa dieback are canopy symptoms shared in common among multiple trunk diseases, which often occur in mixed infection within the vineyard and even within an individual vine.

COMMENTS ON THE DISEASE

[Symptoms](#) first become apparent in vineyards 5 to 7 or more years old, but the infections actually occur in younger vines. Perithecia, the overwintering structures that produce spores, are embedded in a stroma in [diseased woody parts](#) of vines. During winter rainfall, spores are released and wounds made by winter pruning provide infection sites. After a [pruning wound](#) is infected, the pathogen establishes a permanent, localized wood infection, which cannot be eradicated by fungicide applications. In California several plants in addition to cultivated grapevines serve as reservoirs for the pathogen including almond, apricot, apple, blueberry, cherry, crab apple, *Ceanothus* spp., kiwi, pear, oleander, and native plants (California buckeye, big leaf maple, and willow).

MANAGEMENT

Every California vineyard is likely to eventually become infected with one or more trunk diseases. Preventative practices (delayed pruning, double pruning, and applications of pruning-wound protectants) are the most effective management approach for all trunk diseases. When adopted in young vineyards (i.e., under 5 years old) and used on an annual basis, these practices are likely to extend the profitable lifespan of a vineyard.

Under California conditions, delaying pruning to as late as possible in the dormant season (February or later) has been shown to be very effective in reducing the risk of infection. Delayed pruning takes advantage of reduced susceptibility of pruning wounds to infection and avoids the period of highest spore release during typically frequent rain events in December and January. Double pruning is a modified version of delayed pruning for large acreages of cordon-trained, spur-pruned vines; pre-pruning is done in early winter (most often mechanically) by cutting canes to 12 to 18-inches above the final pruning cuts, followed by hand pruning to create spurs in February or later. If delayed pruning is not feasible or for additional protection, consider treating pruning wounds with a protectant. Keep in mind that all wounds made in the dormant season are susceptible; this includes pruning cuts made to canes or larger cuts made to re-position/re-orient spurs.

Although preventative practices are most effective in young vineyards (before the vines become infected by trunk diseases), these practices have some utility in diseased mature vineyards. Wood cankers are very localized, thus protecting more pruning wounds means fewer new cankers each year resulting in fewer dead spurs, arms or canes over time.

Post-infection practices (sanitation and vine surgery) for use in diseased, mature vineyards are not as effective and are far more costly than adopting preventative practices (delayed pruning, double pruning, and applications of pruning-wound protectants) in young vineyards. Nonetheless, sanitation and vine surgery may help maintain yields. In spring, look for dead spurs or for stunted shoots. Later in summer, when there is a reduced chance of rainfall, practice good sanitation by cutting off these cankered

portions of the vine beyond the canker, to where wood appears healthy. Then remove diseased, woody debris from the vineyard and destroy it. Vine surgery involves retraining new cordons or trunks as needed to maintain production. There is a higher success rate when retraining a new trunk, as most of the infections are concentrated in the upper portions of the permanent vine framework.

In addition to the fungicides labeled as pruning-wound protectants, consider using alternative materials, such as a wound sealant with 5% boric acid in acrylic paint (Tech-Gro B-Lock), which is effective against *Eutypa dieback* and *Esca*, or an essential oil (Safecoat VitiSeal).

Common name (Example trade name)	Amount per acre**	R.E.I.‡ (hours)	P.H.I.‡ (days)
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When choosing a pesticide, consider efficacy and the general properties of the fungicide as well as information relating to environmental impact.

A. THIOPHANATE-METHYL (Topsin-M WSB)	See label	48	—
MODE-OF-ACTION GROUP NAME (NUMBER ¹): Methyl benzimidazole carbamates (B1)			
COMMENTS: Can be applied as a paint or spray application. Use allowed under a Special Local Needs label.			
B. MYCLOBUTANIL (Rally 40WSP)	4–5 oz	24	14
MODE-OF-ACTION GROUP NAME (NUMBER ¹): Demethylation inhibitor (G1)			
COMMENTS: Do not apply more than 1.5 lb of product/acre per season.			
C. TETRACONAZOLE (Mettle 125ME)	3–5 oz	12	14
MODE-OF-ACTION GROUP NAME (NUMBER ¹): Demethylation inhibitor (G1)			
COMMENTS: Do not apply more than 10 fl oz/acre per season.			

** Apply with enough water to provide complete coverage.

‡ Restricted entry interval (R.E.I.) is the number of hours (unless otherwise noted) from treatment until the treated area can be safely entered without protective clothing. Preharvest interval (P.H.I.) is the number of days from treatment to harvest. In some cases the R.E.I. exceeds the P.H.I. The longer of two intervals is the minimum time that must elapse before harvest.

1 Group numbers are assigned by the Fungicide Resistance Action Committee (FRAC) according to different modes of actions. Fungicides with a different Group number are suitable to alternate in a resistance management program. For more information, see <http://www.frac.info/>.

NA Not applicable.

IMPORTANT LINKS

- [Guide to Vineyard Trunk Diseases in California](#) (PDF) (If printing, use [this version](#) and in print settings under size options choose "actual size" and "auto portrait/landscape orientation")

Precautions

PUBLICATION

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