

CONTROLLING BUNCH ROT IN WINE GRAPES IN THE SAN JOAQUIN VALLEY

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Research data shows a trend toward better control of bunch rot if fungicides are applied at bloom, preclose and veraison. The trials that generated this data were primarily focused on bunch rot caused by *Botrytis cinerea*. Growth of the fungus is favored by cool, wet weather conditions which are common during the growing season in the northern and coastal wine grape producing areas. These weather conditions are atypical of growing season conditions in the central and southern San Joaquin Valley where almost 70 percent of California's grape crop is grown.

Under the Valley's normal warm and dry weather bunch rot is caused by a number of fungi which make up what is known as the summer bunch rot complex. These rots can be recognized by masses of black, brown or green spores on the surface of the berries. Various microorganisms including yeasts and bacteria often follow bunch rots and culminate in sour rot. The vinegar-like odor associated with sour rot is produced by

bacteria carried by fruit flies or dried fruit beetles.

The fungi involved in the summer bunch rot complex are called secondary invaders because they infect ripening berries following an injury such as those caused by insects, birds, growth cracks or powdery mildew lesions. Chemical treatments are ineffective in preventing summer bunch rot. Management is based on reducing the fruit injury which allow the fungi to enter.

Given that the summer bunch rot complex is predominant and that fungicide sprays are ineffective, why do many Valley grape growers faithfully apply bloom and postbloom treatments? Is there any benefit to these sprays under our normal weather patterns? This is the question a group of researchers lead by plant pathologists Jim Stapleton, UCIPM Advisor at Kearney Ag Center and Jim Marois, UC Davis, wanted to answer. Three field trials were conducted in commercial Zinfandel vineyards in Madera, Modesto and the Sacramento Delta in

1993. Rovral was applied at 10%, 50% and 100% bloom and preclose and evaluated for effectiveness against the various fungi involved in the summer bunch rot complex. No early season rot developed in any of the sites despite the alternating rain and warm, sunny weather during the 1993 bloom period.

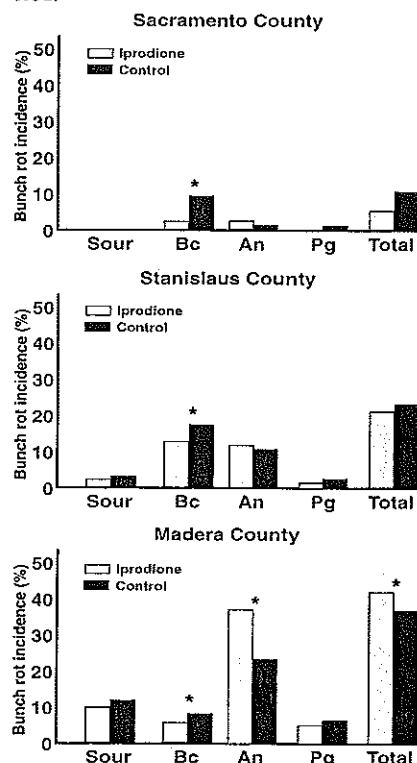


Figure 1. Effect of fungicide bloom sprays on bunch rot incidence in Zinfandel at harvest at three locations in the San Joaquin Valley, 1993. Sour = sour rot; Bc = *Botrytis cinerea*; An = *Aspergillus niger*; Pg = *Penicillium glabrum*; * = Difference significant at P<0.05.

At harvest, *Botrytis* bunch rot predominated in the cooler, more humid climate of the Sacramento Delta, while rot caused by *Aspergillus niger* was more common in Stanislaus and Madera Counties. Bloom sprays effectively reduced *Botrytis* bunch rot in all three vineyards. However, they did not reduce sour rot, rots caused by *Aspergillus niger* or *Penicillium glabrum*, or total rot at any of the sites. Data indicates that bloom sprays may be helpful in cooler grape growing areas where *Botrytis* bunch rot is prevalent, but little or no value in warmer, dryer areas where rots caused by other organisms predominate. Further experiments are being conducted this season. (3)

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