

## *Trunk Disease Survey in Fresno: Preliminary Results*

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### **Issue**

Trunk, or wood-canker, diseases, including *Botryosphaeria* dieback, Esca, *Eutypa* dieback, and *Phomopsis* dieback, present a serious challenge to winegrape growers. Many vineyards in California are likely infected and yield losses in severely symptomatic vineyards can reach over 90%. The overall economic impact of losses to *Eutypa* alone just in California has been estimated at 14% of gross producer value. Trunk diseases take a long time to develop and often become symptomatic only years after infection has already occurred, at which point management options are limited. While preventative management practices are available, grape growers may be hesitant to use them due to uncertainties about cost-effectiveness and future risk of infection.

### **Key Findings**

Grape growers in the southern San Joaquin valley, predominantly raisin growers in Fresno county, use both delayed pruning and pruning-wound protectants at relatively low levels for the prevention of trunk disease. For both practices, almost 40% of growers begin using the practice in vineyards older than 13 years. Growers rated pruning-wound protectants slightly more positively than delayed pruning for both maintaining yield and cost-effectiveness.

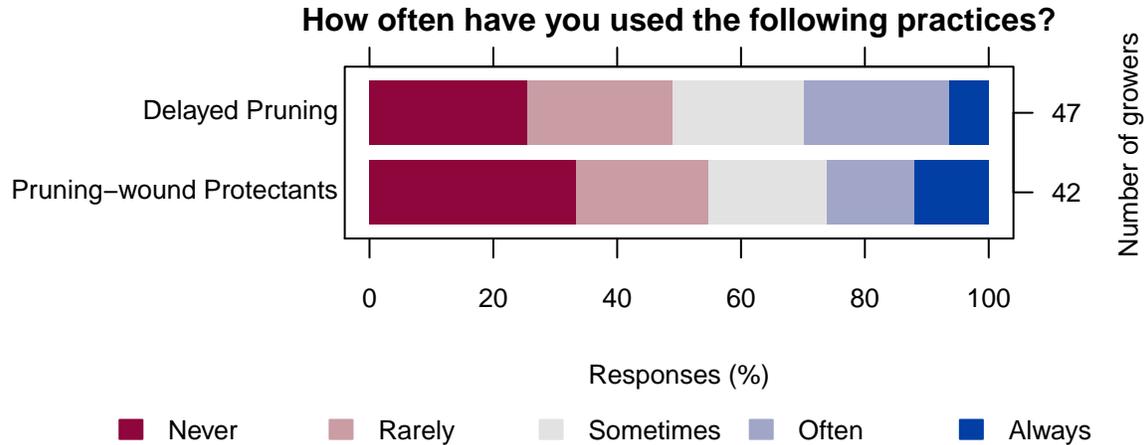
### **Methodology**

We conducted a survey of attendees at the San Joaquin Valley Grape Symposium, organized and hosted by Matthew Fidelibus, UCCE Extension Specialist, held in Easton, CA on January 8th, 2014. We used Turning Point, an electronic audience response system, to conduct the survey. UCCE Viticulture farm advisors and industry representatives helped design the survey. Up to 67 individuals responded to any given survey question.

Similar surveys are being conducted in other grape growing regions of California in the winter of 2013-2014. We are also conducting economic cost-benefit studies to better understand the long-term costs and benefits of different management practices in a range of scenarios. Combined, this research will provide us with a better understanding of the long-term efficacy of these management practices and the incentives motivating grower decision-making. We hope that this information will, in turn, provide growers and other managers a better understanding of how best to deal with trunk diseases.

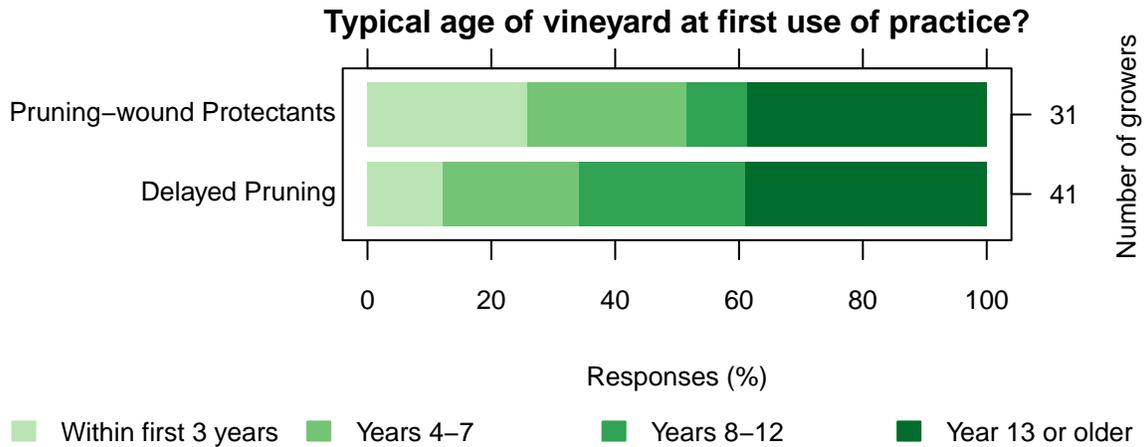
### Detailed Results

We asked raisin growers from the southern San Joaquin valley about two practices known to be effective in preventing trunk diseases: delayed pruning and the application of pruning-wound protectants. We first asked growers how often they have used (or advised, for those in an advisory role) each of the practices in the last five years. As seen in Figure 1, growers use both delayed pruning and pruning-wound protectants at relatively low levels. Between 50-60% of growers never or rarely use these two practices.



**Figure 1** – Percentage of responses to the following question: In the last five years, how often have you used (or advised) delayed pruning and pruning-wound protectants to manage trunk diseases? Answer options ranged from "Never" to "Always" (shown at the bottom of the figure). Total number of responses to each question is shown on the right, labeled as number of growers.

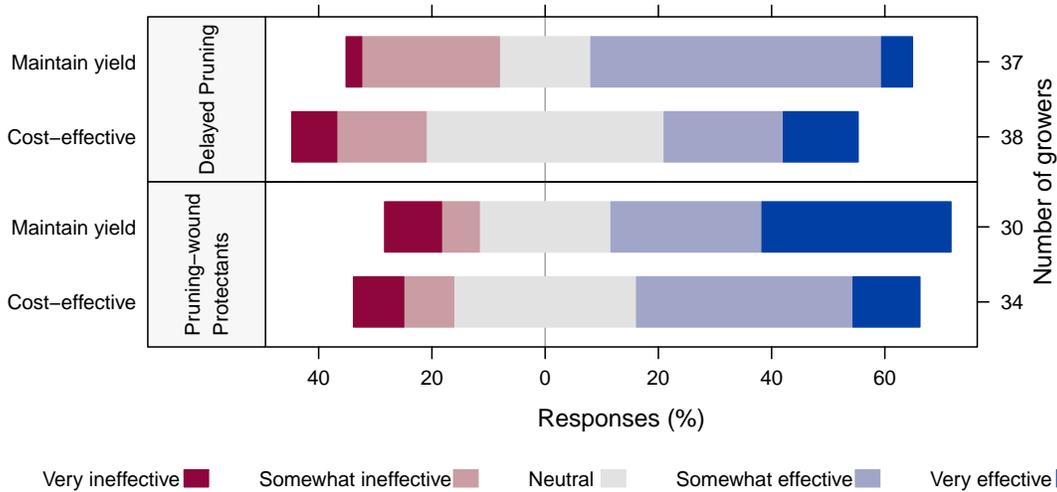
We also asked growers what the typical age of a vineyard was when they first started using each of the practices. Because these practices are most effective when used as preventative measures before infection occurs, the age of the vineyard at first use is an indication as to whether the practices are being used optimally. Symptoms typically become apparent in vineyards eight years or older even when infection occurs much earlier. As seen in Figure 2, for both practices, about 40% of the growers reported typical first use to be in vineyards older than thirteen years old. Thus a sizable minority of growers likely start to use these preventative practices after infection has already occurred.



**Figure 2** – Percentage of responses to the following question: In the last five years, what was the typical age of the vineyard when you started using (or advising) delayed pruning and pruning-wound protectants to manage trunk diseases? Answer options ranged from "Within first 3 years" to "Year 13 or older" (shown at the bottom of the figure). Total number of responses to each question is shown on the right, labeled as number of growers.

Finally, we asked growers to evaluate the efficacy of each of the practices for two different criteria: maintaining adequate yield and cost-effectiveness. As seen in Figure 3, growers rated both practices mildly positively for both characteristics. Growers rated pruning-wound protectants slightly more positively than they did delayed pruning.

**How effective is the practice in achieving the following goals?**



**Figure 3** – Percentage of responses to the following question: In the last five years, how effective was each practice in terms of: maintaining yields / cost-effectiveness? Answer options are shown at the bottom of the figure. Total number of responses is shown on the right, labeled as number of growers.