

## *Trunk Disease Survey in the Central Coast: Preliminary Results*

Kendra Baumgartner, USDA-Agricultural Research Service  
Renaud Travadon, USDA-Agricultural Research Service  
Vicken Hillis, University of California, Davis  
Jonathan Kaplan, California State University, Sacramento  
Mark Lubell, University of California, Davis  
Funded by the USDA-NIFA Specialty Crops Research Initiative

---

### **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 Central Coast (crush districts 6, 7 and 8) use delayed pruning in order to prevent trunk disease more than they do double pruning or pruning-wound protectants. For all three practices, about 50% of growers begin using the practice in vineyards younger than 8 years old. Growers rated all three practices very positively for effectiveness in maintaining adequate yields and rated pruning-wound protectants and delayed pruning very positively in terms of cost-effectiveness. In contrast, growers rated double pruning neutrally in terms of cost-effectiveness.

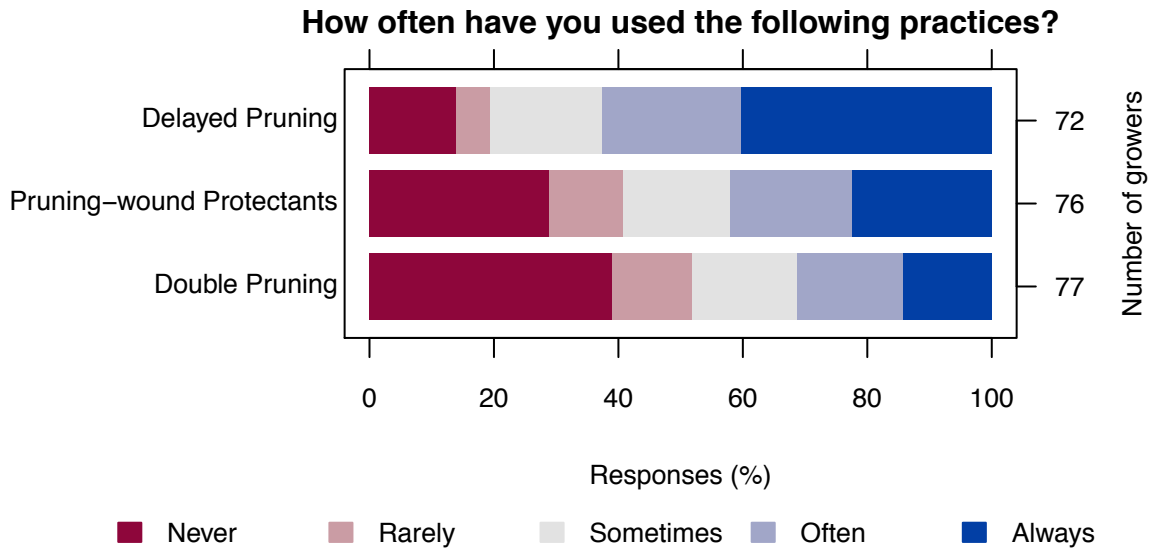
### **Methodology**

We conducted a survey of attendees at a University of California Cooperative Extension meeting, organized and hosted by Mark Battany, Viticulture Farm Advisor in San Luis Obispo and Santa Barbara Counties, held in Templeton, CA on February 28th, 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 80 individuals responded to any given survey question.

Similar surveys are being conducted in other winegrowing 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.

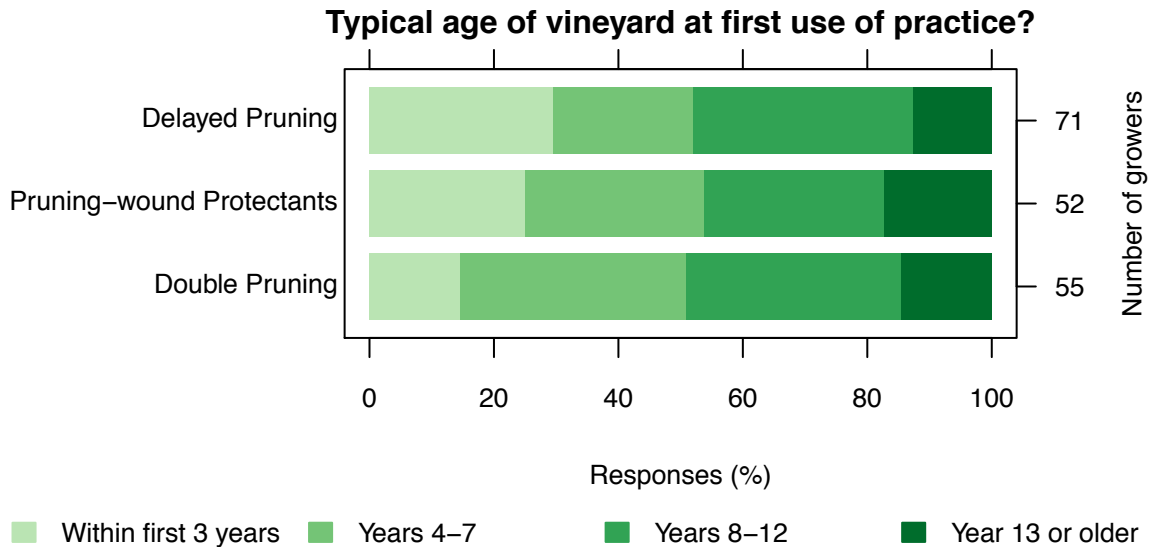
### Detailed Results

We asked winegrape growers from the Central Coast about three practices known to be effective in preventing trunk diseases: delayed pruning, double 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, delayed pruning is the most common practice, followed by pruning-wound protectants and then double pruning. Over 60% of growers use delayed pruning either often or always. By contrast, over 50% of all growers use double pruning either never or rarely.



**Figure 1** – Percentage of responses to the following question: In the last five years, how often have you used (or advised) delayed pruning, pruning-wound protectants, and double pruning 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.

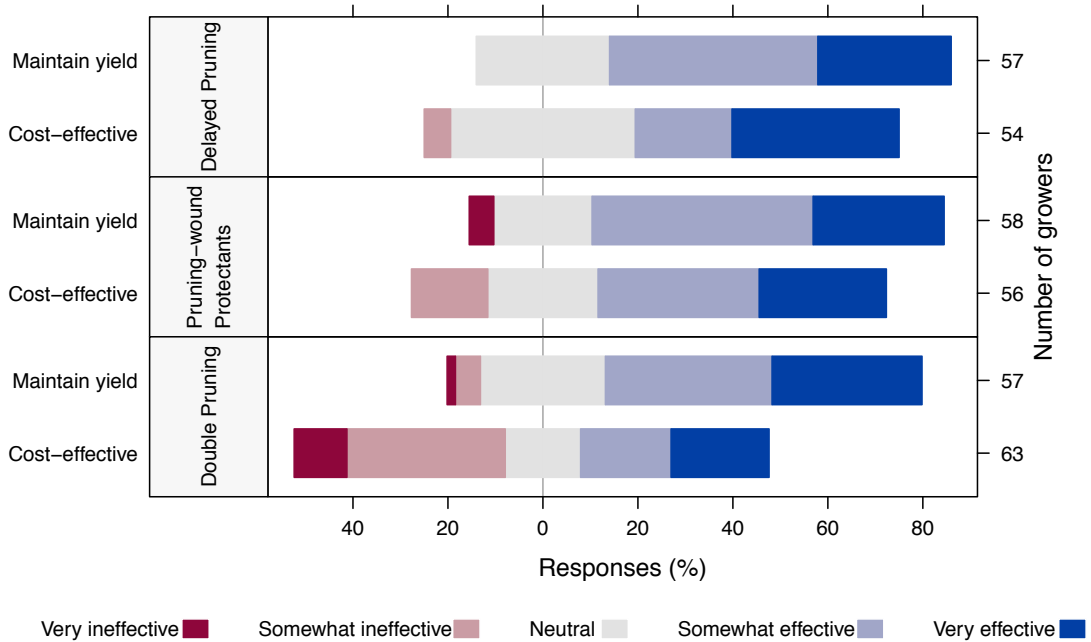
We also asked growers what the typical age of a vineyard was when they first started using each of the practices. Because these practices are most effective when used as preventative measures before infection occurs, the age of the vineyard at first use is an indication as to whether the practices are 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 all three practices, only slightly more than half of the growers reported typical first use to be in vineyards younger than eight years old. Thus a sizable percentage 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, pruning-wound protectants, and double pruning 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 all three practices positively for both characteristics, with the single exception of the cost-effectiveness of double pruning, which growers rated neutrally. Growers rated the practices only slightly less positively for cost-effectiveness than they did for maintaining yield, again with the exception of double 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.