Vineyard Views

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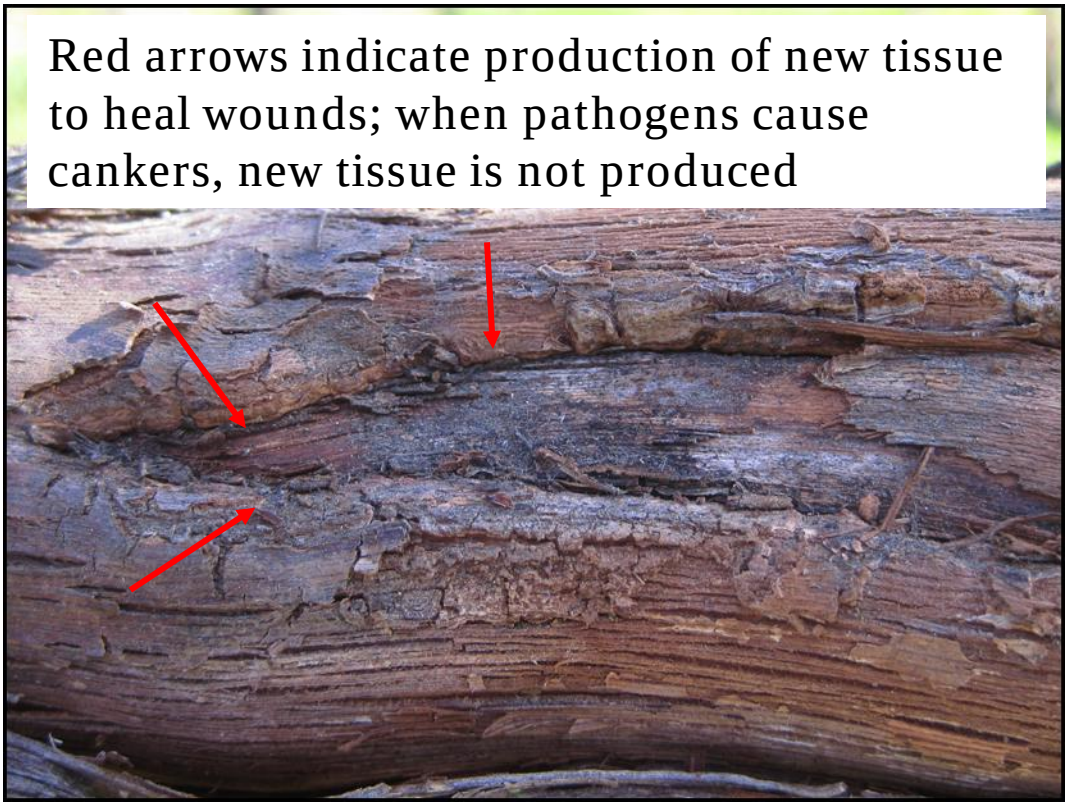
Is it a trunk disease? The case of the missing pathogen

In January, Dr. Gubler and I went to look at a vineyard where the manager was concerned that a trunk disease (*Eutypa* or *Botryosphaeria*) was affecting his vines. He was particularly concerned because the canker-like symptoms were also visible on the trees surrounding the reservoir and the olive trees at the edge of the vineyard. After close inspection, Dr. Gubler mentioned several clues that led him to suspect the symptoms should not be attributed to fungal pathogens: (1) across plant species, all damage was on the West and Southern exposures; there were no symptoms on the North or Eastern exposures of any species, and (2) all plant species produced new tissue at the edges of the wounds in an attempt to heal. This is depicted in the photographs below (red arrows). Plants that are infected by canker-causing fungi are NOT able to grow new tissue to heal their wounds. Dr. Gubler's diagnosis was confirmed by laboratory testing of vine tissue: NO pathogenic fungi were isolated from the samples.

Since we are not dealing with a trunk disease, what is our hypothesis for the cause of this damage? Dr. Gubler suspects that a weather event occurred 4-5 years ago. The area likely experienced warm temperatures during the day, followed by a very rapid drop in temperature in the evening. As the sun heated the southern and western-exposed portions of the bark, sap began flowing in these areas. The tissue was damaged when the temperature dropped rapidly in the evening. Unfortunately, there are no temperature records for the property to confirm this. However, our observations and the laboratory tests strongly suggest that we are dealing with a weather-related event, rather than a pathogenic organism. Good news for the grower who does not have to rehabilitate vines!

Weather-related damage to vines, resembling symptoms of trunk disease

Red arrows indicate production of new tissue to heal wounds; when pathogens cause cankers, new tissue is not produced



Similar damage to olive and other species suggests abiotic factors