

The Future of Fine Wines in the Applegate

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AVERAGE GROWING SEASON TEMPERATURES

THE RANGE IN THE ABILITY TO RIPEN VARIETIES

Northern Hemisphere (Apr-Oct), Southern Hemisphere (Oct-Apr)

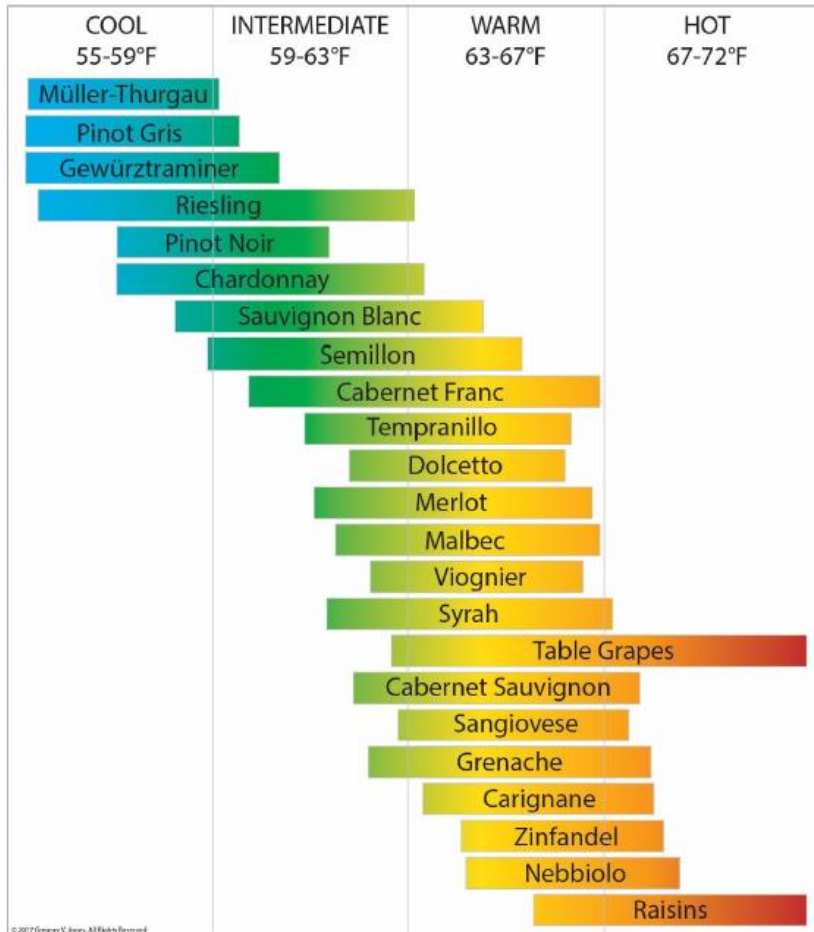


Figure Caption: Climate-maturity groupings based on growing season average temperatures. The horizontal bars represent the range of temperatures that each variety is known to ripen and produce high to premium quality wine in the world's benchmark regions. Please note that some adjustments may occur as more data become available, but changes of more than +/- 0.2-0.5°C (+/- 0.3-0.9°F) for any variety are highly unlikely. The figure and the research behind it are a constant work in progress and are used with permission by the author, Dr. Gregory V. Jones (Jones, 2006; Jones et al. 2012). © 2017 Gregory V. Jones, All Rights Reserved

Those of us in the Applegate Valley involved in agriculture and forestry know full well that our future depends on the climate. Crops and trees require the pattern of temperature and water availability with which they are familiar.

Substantial deviations from their historic norm will likely result in a depressed growth and yield.

If we look at historic patterns and projected trends in these variables, we can see whether there is likely to be a problem. In this discussion, I will focus on one of my favorite attributes of our region: the wine varieties.

Internationally known wine terroir expert Dr. Greg Jones has studied the optimum growing season temperature of wine varieties important in our Oregon wine-growing areas and produced the graph depicted in Figure 1. The historical (1981-2010) average temperature for this growing season was

58.1°F for Jackson County and 60.1°F for Josephine County, appropriate for varieties to the upper left of the chart. The business-as-usual climate projection scenario assumes we continue our accelerating use of fossil fuels and greenhouse gas emissions as currently. The business-as-usual projection for 2050-2074 for Jackson County is nearly 64°F and 67°F for Josephine County. By 2075-2099, these values reach 66.6°F and 68.3°F respectively indicating a climate more suitable for the varieties on the lower right of the chart with a worst-case future of table grapes and raisins.

If, on the other hand, we manage to lower that greenhouse gas emissions trajectory substantially, we could find these counties experiencing less severe warming. By 2050-2074, Jackson will likely be at 61.5°F and Josephine 63.8°F, while by 2075-2099, Jackson would reach 62.7°F and Josephine 64.6°F above the 1981-2010 baseline. Thus, if – on a global scale – we collectively reduce the increasing rate of greenhouse gas emissions, the Applegate climate would be appropriate for varieties in the mid-range of the chart.

Another climatic wrinkle challenging our local agriculture is the shifting water availability pattern. Not only are summer growing seasons becoming drier, but also winter snowpack is declining. This compromises summer stream flow and irrigation water availability. In addition, the threat of extended droughts and heat waves poses an extreme weather threat while the smoke from wildfires adds further to potential problems.

The question of interest is: how are regional vintners responding to the dilemma?

In closing, it is worth noting that wine varieties are no different from other agricultural or forestry species in their dependence on climate. The projected climate trajectory will have parallel impacts on our agriculture and forestry. Land managers across the Applegate should research the climatic optima of their species of choice and plan accordingly.

