



UC DAVIS WEIGHS IN ON CLIMATE CHANGE

ALLEN BALIK, THE WINE EXCHANGE, NAPA VALLEY REGISTER
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Our earth's climate is definitely changing while the influence of vocal "doubters" is shrinking. These are facts shared by over 90 percent of the scientific community, and the big question weighing on the minds of many is simply, "Now what do we do?"

Our changing climate has brought on searing heat and drought in many areas of the globe (including California's wine country) creating some of the most devastating wildfires in history, whether measured by acreage burnt, property destroyed and damaged or lives lost.

On the other end of the scale, it has also resulted in blizzards, ice cap meltdowns, rising sea levels and floods along with massive and numerous hurricanes, tornados, typhoons and cyclones.

Due to climate change, we've had to alter the way we live and many of the choices we make from day-to-day. Among



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many households and industries – especially those related to agriculture – these changes have been difficult and often expensive to implement.

Earlier this month, I was invited to join a most informative webinar presented by the UC Davis Library and the Robert Mondavi Institute for Wine and Food Science at UC Davis. It was titled, “Savor: California’s Vanishing Chardonnay.” Chancellor Gary May and University Librarian/Vice-Provost for Digital Scholarship MacKensie Smith were hosts and Robert Mondavi Institute Director Andrew Whitehouse served as moderator.

Although the webinar subject referred to the influence of climate change on Chardonnay, the discussion quickly morphed into a far broader exploration of production, trade and world events shaping the wine industry (from vineyard to table) during this time of change.

Setting this presentation apart from others I’ve previously observed and written about, was its clear focus on science, practical application and consumer messaging set in a multi-dimensional discussion presented by recognized experts in each discipline.

Leading off on the scientific side was Dr. Elisabeth Forrester, assistant professor at UC Davis Department of Viticulture and Enology, followed by practical applications from Larkmead winemaker Dan Petroski.

Concluding with consumer messaging was San Francisco Chronicle wine critic and columnist Esther Mobley. Each presentation was directed at the panelist’s expertise but carefully interwoven with insightful contributions from the others.

Dr. Forrester quickly pointed out that 2020 is on track to rival 2016 as the warmest year in recent history and the mean-values of warming are dramatically increasing. She also referenced the wide swings of heat extremes, increasing droughts and shifts in disease pressures along with a more prolonged and intensive fire season as challenges we must meet in adapting to climate change.

Napa and other winegrowing areas of the world are experiencing increased heat waves (100 degrees for three days or more), escalating evaporation rates and drought conditions that are, “causing added stress on both organic and human systems.” She added that the timing and amount of precipitation are equally important as evidenced by decreased winter snowpack affecting water availability throughout the year.

From the 1930s to the mid-1950s, UC Davis professors Maynard Amarine and A. J. Winkler worked to develop the Winkler Index that is an expression of heat summation based on measured “degree-days” and the establishment of five climate region profiles (“I” being the coolest to “V” as the warmest). The scale was meant to suggest the planting of recommended varieties in various growing areas based on the heat index.



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Since its inception, this system has been adapted to growing areas around the world. But, according to Forrestel, it now needs revision based on our increased data collection methods and the changing climate. For a reference point, Napa Valley is quite diverse in primarily representing Regions I to IV with most AVAs in Region III.

Updating the index is expected to change the suggested varieties grown in specific areas, although factors such as consumer taste patterns, growing history/traditions and market conditions continue to influence final decisions. With this in mind, Forrestel is currently studying 120 different varieties (with 60 to 70 as particularly viable) for their potential adaptation and acceptance to a changing model. She is also working with parallel studies in Bordeaux and Adelaide to lend an international perspective to her work.

Dan Petroski, a long-time proponent of understanding climate change, finds ways to adapt his growing decisions aimed at producing the best possible wine from a specific area regardless of varietal composition. He believes planting choices are not necessarily based on a specific varietal since growing conditions (as we're now witnessing) may change, so flexibility must be considered when decisions are made.

Petroski's background was in consumer marketing and trends, so data is always an important ingredient in accessing all options. When he moved to Larkmead as cellar master in 2004, he began looking at changing data-points. A wake-up call to climate change in 2008 shifted his focus from market-driven decision-making to climate change and its ultimate effect on crafting the finest wine possible from a specific site.

He began to realize that what we practiced 50 years ago was not what we repeated 25 years later or what we're executing now. In the 1950s and 1960s, Chardonnay and Cabernet were minor players in California's wine-growing areas, including Napa Valley.

In 1995 a significant portion of Larkmead (now celebrating their 125th anniversary of growing grapes) was planted to Chardonnay, Sauvignon Blanc, Chenin Blanc and Sauvignon Vert. Today only 5 percent of the vineyard is planted to white grapes. Time, the market and growing conditions dictated many changes.

Petroski pointed out that Hanzell in Sonoma traces its history back to early plantings of Chardonnay and Pinot Noir in the 1950s, following a Burgundian model. In contrast, Robert Mondavi in the 1960s chose to follow the Bordeaux model by relying on Cabernet Sauvignon and Sauvignon Blanc (named by him as Fumé Blanc for marketing purposes) to establish his brand.

The choices were somewhat limited at that time as the American palate was familiar with only a handful of Old World examples led by Bordeaux and Burgundy. So modeling after them seemed a more direct path in the market. But as



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Petroski asks, “What if Vega Sicilia (a historic wine from Spain based on Tempranillo) or others from Italy, Portugal, the Rhone Valley, etc. were chosen as the models? Our current local focus may be quite different.”

Petroski feels strongly that we have to further concentrate on the “Napa Valley” brand and not fear accomplishing this task with the best grapes we can grow even if the trail leads to varieties other than Cabernet Sauvignon. And while Cabernet may always have a place in the valley, it may not always be the lead actor. “[The market] must find out what we want to drink and how we want to drink it in furthering our understanding of the consumer culture.”

Esther Mobley finds a major challenge may be communicating the story of necessary varietal alterations needed to adapt to climate change. However, she also indicated some positive stylistic changes from the adaptive process could actually ease the transition.

Mobley agreed with both Forrestel and Petroski that we should not be bound by the restrictive rules of the Old World that dictate varieties permitted, farming practices allowed and various winemaking protocols followed in officially designated growing areas. Rather, all agreed fewer restrictions and more flexibility keep well thought out options available.

Mobley went on to remind us that flexibility is important and a worthwhile path in adapting to current climatic conditions. However, economic realities (high returns on Cabernet, Chardonnay, etc.) will also play a significant role in decision-making processes. Conditions are rapidly changing and relying on what worked in the past is not necessarily the best route to predicting future needs.

The key takeaways from this most instructive UC Davis webinar were clear with the focus on the next 25 plus years rather than repeating the last. Our climate is changing rapidly and somewhat disparately in different areas. Warming may be an advantage to southern England and the growth of its nascent sparkling wine presence, but certainly not welcome here in Napa where it presents significant challenges in maintaining the preeminence of our Cabernet.

While some degree of flexibility is paramount, all the panelists agreed what’s most important to the future of Napa Valley and California wines, in general, is the ultimate quality and consumer appeal for “what’s in the glass.” Only time will reveal the ever changing road ahead.