**Deep Roots of Sustainability in California by Margaret Raymo**

Sustenance, sustain, sustainability, sustainment; all of these words point to the concept of longevity. Humans require sustenance to survive, Mother Earth needs sustainability to keep working her undeniable magic. If I were to summarize sustainability in one in my own words, it would be "practicing methods with the intention of improving the longevity of an organism, place, or organization," in this case, vineyards and the communities that our wineries inhabit, specifically in California. Ours and past generations have the responsibility to leave the Earth in a better condition than we found it, and that does not stop short of taking care of our land where there is a constant threat of drought, wildfires, and pollution. As a representative of a large portfolio of naturally made wine, I speak to consumers and buyers on the topic of dry farming at least once a week, so the subject of sustainability, specifically dry farming, piques my interest.

The state of California is under constant threat of drought, and responsible water usage is a priority for most wine makers. Although most vineyards are irrigated by drip systems, the numbers add up quickly in regards to how much water is required to produce a gallon of wine. According to UC Davis's Dan Sumner's presentation, "Water into Wine in California: Economic Perspectives," it takes ~318 gallons of water to produce one gallon of wine. With some quick math and a statistic from discovercaliforniawines.com we learn that 242 million cases of California wine was sold to the domestic market in 2021, utilizing ~184,694,400,000 gallons of water in just one growing season. That a lot of water from a quickly depleting water table.

In reference to the webinar facilitated on April 21, winemaker Nicholas Cantacuzene from Thomas George Estate in Forestville, CA spoke about his expertise in dry farming, the process of converting vineyards, and subsequent benefits of dry farming when it comes to winemaking. Nicholas has successfully converted Cresta, a 14-acre parcel, to being completely dry farmed in about three years. Depending on soil type and conditions, it can take up to five years to fully convert a vineyard to dry farming, however the benefits reaped are substantial. The process involves reducing irrigation little by little and cutting superficial root systems to encourage deeper root growth to tap into water reserves deep below the surface. Cover crop is also critical; grass and legumes help impart carbon and nitrogen organically into the soil. These practices result in thinner canopies, concentrated fruit, healthier soils, less pruning, and ultimately a better product. With improved yields, the work becomes less complicated in the winery, making native ferment a less risky practice for a consistent and well-balanced wine. Not only is the winemaker creating a higher quality product, naturally, but also mitigating risk of loss of crop due to severe drought. As it turns out, the vines know what to do, we just have to let them do it!

In the webinar on August 10, 2021 "Estate of Mind: Fruit from an Exceptional Source," Russ Weiss from Silverado Estate in Coombsville spoke about the Mount George vineyard and the perfect conditions to grow grapes despite only 24.6 inches of rainfall annually. This small AVA is currently in the midst of a three-year drought. The Coombsville AVA has been able to grow vitis vinifera since 1868 due to its incredibly unique soil makeup of volcanic tufa, a result of an igneous leak from Mount George, a now dormant volcano. The consistent and unique soil type throughout this area holds huge deposits of water about 15-20 feet below the surface that allows the root systems to reach way below and tap into the reserves during years that would otherwise be devastating drought conditions. This is an excellent example of sustainability inspired by the Earth, Herself. As a result of the hard work that these vines are doing, the fruit is high quality and wine produced has vibrant acidity with exceptional phenol and tannic structure. The ultimate example of dry farming in Napa Valley.

While we are making strides to preserve and improve Mother Earth and Her soils, it would be for naught if we denied caring for and improving the communities around us. Andy Lynch, winemaker and Head of Quality at Wente, spoke on Wente's mission statement that they "have a daily commitment to their community, workers, and environment." This is evident through the development of Wente Foundation for Arts Education, their support of more than 50 US based non-profits, paid volunteer hours for all employees, and long average tenure of employment. Not only did the Wente Brothers, Phil and Eric, help write the Sustainable Wine Growing Code for the California Wine Institute, but fewer than 10% of wineries hold a sustainability certification in both vineyard and winery, Wente being amongst them. Year after year they prove themselves to be leaders in sustainability in California.

With a population of close to eight billion people inhabiting the Earth it is up to us to develop new ways to ensure sustained existence for as long as possible. It is critical that we develop new ways to preserve natural resources by implementing efforts that take a day or an hour, to processes that take up to five or ten years. In a world where some people see climate change as a debatable topic, the farmers and wine makers that are watching the Earth change before our eyes are fighting each day to help protect Her. I am proud to be a part of an industry that is committed to protecting our planet and the vital resources we depend on so heavily.