Overview

- Ste. Michelle Wine Estates is the leading wine producer in Washington state and owns the top six wineries in the state as well. The company also owns 60,000 acres of vineyards and plans on expanding in the coming years.

Summary

- Receiving hands on experience in the vineyard has provided me with the knowledge of basic vineyard operations and the reasoning behind them. Additionally, the internship has enhanced my skills in communication and collaboration. Reporting to multiple vineyard managers and staying up to date on pesticide spray schedules and irrigation schedules required constant communication in order to make sure I collected data efficiently and in a safe manner. The internship has also helped by allowing me to apply what I’ve learned about viticulture in class to my work in the vineyards. Seeing the drastic changes that take place during the phenological stages of the grapes was fascinating to watch evolve over the course of the internship. The knowledge I’ve accumulated and the experience I’ve gained in the field will help set me up for future jobs and internships in the wine industry.

Responsibilities

- My main responsibility during the internship was to collect data for the agricultural engineer. This consisted of taking measurements of the drip emitter rate of the drip lines throughout the vineyard. In order to collect an appropriate amount of data, each vineyard block would require sixteen different measurements. These vineyard blocks would be labeled by grape variety and ranged in size from a few acres up to ten acres and higher. I measured the drip emitter rate by placing the graduated cylinder under a drip emitter and recording the volume of the water after six minutes. After repeating this procedure sixteen times per block, I organized the data into a spreadsheet and calculated the distribution of uniformity by taking the average of the lower 25% of the measurements and dividing that number by the total average of the measurements of the block. This data is then analyzed to determine if the irrigation system needs to be updated or if drip lines need to be replaced.

- In addition to measuring the drip emitter rate, I also measured the ClO2 concentration and pH of the water that the drip lines are using. ClO2 and acid are both injected into the drip lines to flush out bacteria and prevent the clogging of the emitters to ensure uniformity. I took two measurements of ClO2 and two measurements for pH at each block. These measurements would then be put into the same spreadsheet as the drip emitter rate data and sent to the agricultural engineer and vineyard manager.

- On certain days my mentor would organize for me to shadow viticulturists to learn more about the growing of grapes as well as the diseases and pests that harm vineyards. During these days I learned that powdery mildew attacks young plant tissue, so that if the canopy continues to grow, the plant will still be susceptible since it is producing new leaves. Because of this, growers make sure the canopy does not continue to grow during fruit set and veraison. This is why shoot thinning is very important leading up to these phenological stages. In addition, too much shade can inhibit growth for the next harvest since leaves essential for providing carbohydrates for new shoots will be shaded out by a thick canopy.

- Once bloom was over and fruit set came around, I helped vineyard managers by counting fruit clusters and scouting for powdery mildew. Vineyard managers would provide me with a list of certain blocks they wanted to get counts from, and I would record 20 counts for each block. This process included counting all grape clusters between two trunks and then walking to another row in the block and repeating the count until 20 different counts have been made. While counting I would also look for signs of powdery mildew, which if not treated, could ruin the crop for an entire plant. Powdery mildew can be identified by a white fuzzy material that appears on the grape clusters. It favors shaded, compact clusters so plants with large canopies are more susceptible. After collecting the counts, I would provide the data to the vineyard managers which they used to help estimate their crop for harvest.