

Mercer Canyons Viticulture Internship

Alderdale, Washington

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Mercer Canyons LLC

Mercer Canyons LLC is derived from a family owned business started in the late 19th century. The Mercer family began ranching and farming in the Alderdale area in 1886, and has since expanded to include field crops, root crops, and in 1976, grapes. Mercer became one of the pioneers of grape growing in the American Viticultural Area known as the horse heaven hills, and has continued to produce high quality fruit and wines from its start. Still a family owned company, Mercer Canyons LLC has invested much into the community of Alderdale, and in the employees that live there. As the company continues to expand in production of field crops and grapes alike, Mercer Canyons aims to preserve the Alderdale area, and promote a safe and healthy work environment by using sustainable farming techniques and protecting the natural habitats that surround the farm.



Figure 3:
My four wheeler, with comfort modifications

Internship Tasks and Responsibilities

My internship in the summer of 2016 took place in the viticulture department of Mercer Canyons, LLC. The internship started at the end of March, right around when pre-bloom occurred in the region that the vineyards are located. Mercer Canyons is home to nearly 2000 acres in the Horse Heaven Hills American Viticultural Area (AVA). The vineyards are spread out over several miles, including areas very near the Columbia River, so I was granted a sport four wheeler in order to cover all of the ground (figure 3). Mercer Canyons' viticulture depart is on the cutting edge of the new field of mechanization in viticulture, with processes such as pruning, thinning (shoot, leaf, and sucker), wire lifting, and harvest.

The first and most extensive project that took place through the length of the internship was the tracking of vines maintained via mechanical methods. Before bloom, my task was to scout vines that displayed a range of pruning intensities in order to note the effects of mechanical pruning. By noting the amount of buds, and types of buds that were left by the mechanical pruning process, I was able to compare the vines to one another, and assess the crop generated by vines cut too short (figure 4), or too tall. Throughout the season, the vines were tracked at important developmental stages to evaluate crop, and the origins of the crop load (count buds, basal buds, latent buds).

After the cataloging of the mechanized trial vines, the vineyard had reached full bloom and the crop estimation for the growing season could begin. Commonly, a block would be estimated, shoot thinned, re-estimated, leaf thinned, and then given a final estimation for the season. Even after the final estimation of the mechanized processes, hand crews are needed to reach a specific crop goal, so another estimation must be completed. Crop estimation in viticulture generally takes the form of cluster counts throughout a block. My method for counting used post-to-post counts in order to account for canopy variations within a block. Post-to-post counts were either four or six vines, depending on the trellising system, and were taken throughout the block. With an average number of clusters per vine, an estimate can be made as to the number of clusters in the block. The number of the clusters can then be multiplied by a projected weight to deduce total crop weight for the block.

After the crop loads were set, a new piece of machinery was loaned to Mercer Canyons for experimental use. The Vignetinox Basilia wire lifter (figure 1) from Italy was loaned to Mercer in order to see its effectiveness in an American viticulture setting. Wire lifting is one of the last and most intensive processes to be mechanized in vineyard systems, and this machine is the first of its kind in the United States. As a fluent Italian speaker, I was able to use my knowledge of the language to understand the complex piece of equipment and became the "resident expert" of the machine. Attached to a standard tractor, the device straddled the row, lifting wires into place on existing posts. Over a two week period, I ran the machine and took notes on the problems and advantages of the equipment. Over the course of the trial, several modifications were made to the machine in an attempt to better suit it to the vineyard system in place (Figure 2). While the equipment is not quite ready for assimilation into the established vineyards, we look forward to working with Vignetinox to develop the machine further.

Grape growth stages demonstrate a double sigmoidal growth curve, the lag phase between the two growth stages represents an important developmental milestone. This developmental stage also signifies roughly six weeks until the beginning of harvest. During the lag phase, three random, whole vines are harvested in order to determine approximate harvest weights. Notably, lag phase only lasts a couple of weeks, and varies based on the varietal, so this required two full weeks straight of taking lag weights.

As the season continues, I will be working with Mercer Canyons, doing what ever needs to be done to ensure quality in our vineyards, including tissue samples to test for nutrients, scouting for both biotic and abiotic diseases, and sampling fruit. When harvest starts, I will be able to drive the harvesters (figure 5) and get a birds-eye view of the harvest process.

Internship Summary

Through my time with Mercer Canyons I have learned much about the goings on in the viticulture part of the wine industry. I have been able to work with long time veterans of the industry, and learn directly from them. My extensive time working within the rows, and in the vines has given me experience that is valuable for my entire career as I am now able to identify numerous differences in varietals and to identify different types of stress and the symptoms they exhibit. My time spent with the members of the crew provided me a great chance to learn how to work with others, even when a language barrier exists. By working with the Spanish speaking members of the crew, I was able to pick up enough Spanish ton convey ideas and give direction in the field. Likely the most valuable experience I gained working with Mercer Canyons is the experience in mechanization. Mechanization is likely the way of the future for viticulture, and agriculture on the whole, so my experience operating and making changes to the machines is invaluable as I go out and look for work in the industry. With the information I have learned, I see myself becoming even more of an asset to a viticulture outfit in the future.



Figure 4:
Vine cut too low by mechanical pruner



Figure 5:
Pellenc tractor used for various tasks including harvest



Figure 1:
Vignetinox Basilia Mechanized wire lifter



Figure 2:
Making modifications to the wire lifter