

Prosser

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Site Description

[Vineyard Soil Health LTARE experiment](#) was implemented at a ~4.3 acre orchard block at the Washington State University Irrigate Agriculture Research and Extension Center in Prosser, WA in June of 2023. The soil was Warden Silt Loam, 2 to 5 percent Slopes (Coarse-silty, mixed, superactive, mesic Xeric Haplocambids) (Soil Survey Staff, 2014).



Prior to planting the vines in June 2023, a forage radish cover crop was planted.

Experimental Design

The vineyard has a randomized complete block design with five treatments replicated 4 times. In the fall of 2022, the vineyard was disked and planted with forage radish.

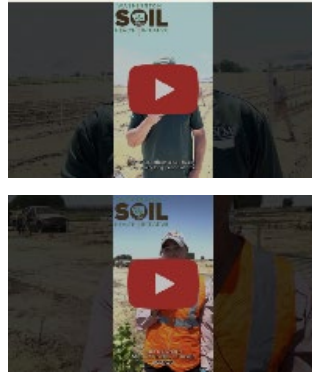


Chardonnay (L) and Cabernet Sauvignon (R) vines patiently awaiting for their long-term location in the LTARE site.

The forage radish cover crop was frost terminated. In the spring the vineyard was disked than was deep ripped repeatedly (4x) prior to mechanical planting. Preliminary soil bulk density analysis after deep ripping from 0-15, 15-30, 30-60, and 60-90 cm depths was measured in duplicate from each treatment block (40 cores). A preliminary soil health panel from soil depths of 0-15, 15-30, 30-60, and 60-90 cm was measured in duplicate with each replicate composed of 7 composite core sections (280 cores).

Each block was mechanically planted and contains three rows of cabernet sauvignon (#33) and three rows of chardonnay (#15) grafted to 1103P rootstock on a 5"x9" spacing. Treatments are business as usual (herbicide+fertilizer), no herbicide/low till (fertilizer, no herbicide), no herbicide/low till + legume cover crop in vine row (fertilizer, no herbicide), no herbicide/low till + compost (no herbicide, no fertilizer), no herbicide/low till + legume cover crop in vine row + perennial wheat in the alley

+ compost (no herbicide and no fertilizer). In collaboration with the Washington Department of Ecology (Melanie Redding) to study nutrient and carbon flux to ground water using monitoring wells located above and below the gradient of the vineyard. This will enable us to study vineyard contributions to groundwater nutrient and carbonate pools. These are rarely studied, but crucial to measure.



Video

See why researchers are jazzed about the establishment of the Prosser LTARE site. [Watch on WaSHI's YouTube channel](#)

Site Establishment

June 2nd, 2023 was an exciting day as the vines were mechanically planted with a VinoMatos planter. Planting perennial crops is labor intensive, but a mechanical planting system can build much of the infrastructure in one pass. The machinery can pull the drip line and wire, drive in posts, and plant the vines.



Other Milestones

In spring of 2023, Liz Gillespie was brought on as the Senior Scientist Assistant/Vineyard Manager to lead the charge of the day to day duties of

A happy group bulk density sampling prior to planting. From L to R, Dr. Collins Wakholi, Dr. Devin Rippner, Dr. Katherine East, Brandon Peterson, Dr. Elizabeth Gillispie.



The newly planted vineyard with tube covers to protect the vines.