

Managing Vineyards with Sheep



Photo: Paicines Ranch

Sheep graze at the Paicines Ranch vineyard in Paicines, California. The vineyard was designed as a silvopasture system with a high cordon trellis system that allows for year-round grazing.

SILVOPASTURE APPROACHES

- Incorporating sheep into a vineyard during the vines' dormant season
- Modifying an existing vineyard for year-round grazing
- Designing and managing a new vineyard for year-round grazing of sheep

CONSIDERATIONS

Sheep:

- Sheep are generally the best option for grazing vineyards due to their size, forage preferences, ease of handling, and availability. In addition to grazing ground cover, sheep are browsers and will want to browse the vines – and sheep can reach higher than you think! Understand the maximum browsing range of the breeds you are considering and also know that sheep often stand on each others' backs, allowing them to reach even higher.
- To take advantage of the beneficial browsing of suckers and shoot tips while avoiding browsing of the canopy, the vineyard will need to be designed or modified specifically to facilitate these interactions. (See below for more on vineyard design and modification.)
- Sheep may also chew on or dislodge sprinklers and drip irrigation, especially if left to graze a given area for longer periods of time.

- Both wool and hair sheep can be used for vineyard grazing. Regardless of the variety, sheep should be selected for calm dispositions, good flocking instincts and ease of care. The ideal sheep breeds for grazing vineyards in California tend to be hair sheep. This includes Dorper, Katahdin and St. Croix.
- Agricultural chemicals can be dangerous to animals. Research any chemicals that you use and how they might affect the species you are considering. The Organic Materials Review Institute (OMRI) [maintains list of inputs that are safe for livestock](#) and meet National Organic Program (NOP) regulations, which can be useful even if you are not pursuing organic certification.

Designing and modifying a vineyard for grazing sheep:

- Three ways that vineyards can be designed and modified to allow for grazing sheep are:
 1. Limiting grazing to the vines' dormant season (simplest and most common option)
 2. Modifying the trellis system for year-round grazing
 3. Designing the system with a higher cordon from the start to allow for year-round grazing
- When designing new vineyards, consider using a high cordon and drip line to allow for year-round grazing. If you're looking to modify an existing vineyard, you can transition to a high wire trellis system without having to replant the whole vineyard. In California such a transition takes an average of about 18 months.
- High cordon trellis systems may have other advantages as well. These systems have [recently been shown](#) to help vines better manage heat stress, shading the berries from heat damage and reducing direct solar radiation. The berries in these high cordon trellis systems maintain their quality and were also shown to have higher levels of anthocyanins while using less water than traditional vertical shoot position (VSP) trellis systems.
- If a high trellis is not possible or not desired, you will have to limit grazing to the vines' dormant season and/or install electric fencing within rows with ample buffers so the vines are protected.
 - For example, some producers using low trellis systems, such as VSP, are grazing sheep post flowering and pre-veraison (while berries are developing but still sour, which is typically between June and August in California). The sheep graze on weeds on the vineyard floor, while also browsing suckers and pulling leaves. However, during this time period there is usually less overall biomass available, meaning the time the sheep are in the vineyard is reduced. It may not make economic sense to graze during this period – especially if hiring a contract grazier.

Timing, duration, and stocking density: Understanding grazing principles and practices before introducing sheep into your vineyards is crucial. Determine a proper stocking density that allows for adequate rest for both the vineyard and the sheep. Additionally, plan how you will continually monitor the health and conditions of both in response to grazing and adapt when needed. Err on the side of too few animals, as opposed to too many, when introducing sheep into your vineyard.

Options for introducing sheep into a vineyard:

If you're just interested in experimenting with grazing sheep in your existing vineyard or only able to graze a small part of the year, here are some other ways to bring sheep into your vineyard:

1. Hire a contract grazier
2. Borrow a few sheep from a producer in the area
3. Buy a few sheep when you need them and then resell them via auction, word of mouth, or online marketplace when you are done

Trying these options for a few seasons can help you understand some of the benefits and challenges to grazing your specific vineyard and to your business before you invest in a herd of your own and a place to house them year-round.

Food safety: Wine grapes are generally not subject to grazing limitations imposed by food safety regulations given that the final product is fermented, a process that kills the pathogens of concern. Any fresh produce or products (such as juice grapes and raisins) are subject to Food Safety Modernization Act (FSMA) regulations, which prohibit grazing of livestock 90-120 days before harvest. Individual packinghouses might have additional requirements that should be considered in advance of introducing livestock. Additionally, you will have to consider how and where to keep animals during the food safety animal exclusion time period.

POTENTIAL BENEFITS

- Grazing can reduce or eliminate the need for hand weeding or mechanical or chemical management directly under vines and in alleys.
- Reductions in the labor, fuel, machinery, and fertilizers associated with weeding can lead to cost savings.
- Adding animal products, such as meat or wool, to an existing enterprise can diversify income streams and increase revenue. Value added products and processing requirements should be considered when selecting the breed of sheep.
- For producers seeking weed management and fertility strategies that are compliant with organic regulations, sheep grazing can be a good option.
- Grazing can reduce negative impacts on beneficial insects as compared to herbicides and tillage.
- Properly managed sheep grazing in vineyards for 10+ years has been shown to enhance soil carbon and soil microbial processes driving soil health without tradeoffs for compaction or salinity if well managed. In turn, this can improve soil fertility and water holding capacity.

Relevant California silvopasture producer case study:

Mazaroli, D.N., and Carlisle, L. California Silvopasture Producer Case Study: Paicines Ranch. Strategy Research Science. (2023).
<https://www.strategyresearchscience.com/paicines-ranch>

ADDITIONAL RESOURCES

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Brain, M. Designing a Vineyard for Year-Round Sheep Grazing (No. 114) [Audio podcast episode]. In *Sustainable Winegrowing*. Vineyard Team. <https://www.vineyardteam.org/resources/resource-library/conservation-and-enhancement-of-biological-diversity.php?id=906>

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Irwin, H. The Faces of Organic / Woolly workers: Sheep help tend the vines. The San Francisco Chronicle. 2006. <https://www.sfgate.com/wine/article/THE-FACES-OF-ORGANIC-Woolly-workers-Sheep-help-2519408.php>

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White et al. The Watson Training System for Bunch Wine Grapes. University of Georgia Extension. (2020). https://secure.caes.uga.edu/extension/publications/files/pdf/B%201522_2.PDF

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