Seiji Estate Farming Method

We focus on the production of premium fruit, relying on decades of experience, new technology and industry advances to provide us with the best possible management.

We have two defined management programs available in advanced farming method today. The sustainable management program conforms to the Low Input Viticulture & Enology (LIVE) certified practices and guidelines and also an organic management program which has been created using several resources over many years. We adopt an organic management which reduces chemical runoff, improves soil health and promotes biodiversity at our vineyard. We believe that healthier soils and vines can produce grapes with more complex flavors.

The following gives a basic outline of how we manage each of the regular practices, but does not include all of our practices.

Canopy Management: We adopt **a 7'x 5' (7ft row x 5ft vine)** spacing, double cane pruned vertical shoot positioned canopy management strategy. This spacing is one of the most cost effective, it hangs close to our target zone of crop load and it allows for efficient farming. By optimizing sunlight exposure and air circulation, canopy management enhances the development of desirable flavors, sugars, and tannins in the grapes. Closer spacing (e.g., 5 feet) can lead to more competition between vines, potentially reducing vigor and yield but often improving fruit quality by concentrating the vine's resources.

Double cane pruning: Each year we prune all but 3 canes, pull the brush into the row, and chop it up as mulch. Two of the remaining canes are then wrapped around the fruiting wire making a T in shape. The third cane is now cut back to a two bud renewal spur. Double cane pruning produces more uniform cluster size, ripening time, and shoot spacing. When the vines are still young they are not strong enough to produce a full canopy, this is why you will see some vines with only one cane. As the vines become older they are able to produce more fruit allowing us to lay down more buds and eventually two canes. Pruning weights allow us to track the vigor of the vines and helps us determine how many buds we can lay down for the coming season. Double cane pruning is ideal for grape varieties that benefit from moderate yields and high fruit quality.

Shoot thinning/Suckering: The vine has enough energy to grow extra shoots from the roots, trunk, head and canes. We remove these extra shoots to keep the canopy open, limit disease and competition within the plant to focus the vine's energy on fewer, more productive shoots. This promotes light penetration and air circulation. Light and air are important for photosynthesis and disease reduction.

Vertical Shoot positioning (VSP): VSP is a system in which all new growth is trained in an upright pattern , creating a narrow, upright canopy that allows good air flow and sunlight exposure. We use three sets of movable catch wires to accomplish this. As the new buds begin to grow, the wires are moved up to "catch" the growing shoots and allow them to continue vertical growth. The wires will then be clipped together to keep the shoots in place.

Leaf Removal: Removing leaves increases light and air circulation around the clusters. This process usually takes place once the shoots have reached the top of the canopy and the clusters are in

bloom, fruit set or just before veraison. Only a small amount of leaves (2-3 per shoot) in the fruit zone are removed from the east side or opposite the sun exposure. The fewer leaves that are pulled the more leaves remain to provide photosynthesis and protection for the clusters. This is usually done by mechanical deleafing machines with a cleanup pass done by hand if needed. This reduces the risk of fungal diseases and helps in the even ripening of grapes.

Hedging: Hedging is done to keep the canopy within the boundaries of the trellis system, reduce disease pressure and improve fruit quality. By removing excess growth you allow the maximum amount of light and air flow into your canopy and vine rows. Hedging is done mechanically only as needed.

Fruit Thinning: The vines will typically produce more fruit than what can be ripened in normal years, to the quality we expect. Excess grape clusters may be removed (thinned) to reduce the vine's fruit load, allowing the remaining clusters to ripen more evenly and fully. This is especially important for improving the quality of wine grapes. For younger vineyards we leave only one cluster per shoot and allow only strong shoots to ripen single clusters. For older, more established vineyards we will rely on estimated cluster weight, number of clusters, health and size of the vine to determine the best scenario. This gives us a yield zone of 4-5.6 lbs per plant or 2.5-3.5 tons per acre . From there we work with winemakers to reach the desired goal of fruit quality and quantity. Fruit thinning is usually done anywhere from fruit set to just after lag phase. We typically remove wings/shoulders and third clusters. We leave 0-2 clusters per shoot depending on size of shoot and cluster weight. Generally this is followed up with a green pass at 50% verasion to remove any lagging clusters and further homogenize the fruit.

Harvest: Picking is done by hand on the agreed upon date by vineyard, winemaker and vineyard manager. The fruit is picked into five gallon buckets, then placed into bins, hand sorted, loaded onto trailers and hauled to our custom crusher. The type of bin is predetermined by vineyard and winemaker. We prefer to use 500lb or 800lb capacity macro bins.

Cover Crops: Cover crops are planted between vine rows for several reasons. During the winter they reduce erosion, and during the growing season they can take up water and nutrients aiding in vine balance. They will also cool the vineyard floor, act as a safe haven for beneficial insects and reduce compaction. The annual cover we plant is a **cereal/legume** combination that will be incorporated into the soil in the spring. This incorporation builds soil organic matter and soil health. Perennial grass cover crops will remain in the rows to reduce water and nutrient availability to the vines. All of this is at varying times during a vineyard's life and development to assist in vine balance. When the vineyard is young it needs little to no competition during the growing season. As the vine grows larger we will then plant a permanent cover crop in every other row or every row as needed to assist in vine balance.

Irrigation: Drip irrigation is a tool in our management system. Irrigation can aid in uniform and fast vine establishment, assist in canopy growth and fruit development. Proper irrigation promotes vine health. We use the drip irrigation system to supply the vine with an exact amount of nutrients, exactly when needed. If we have an unusually dry summer having irrigation will keep the vine functioning and carry the fruit to ripeness.

Disease Control: In the Willamette Valley we face two main fungi that threaten to destroy our grape crop, **Powdery Mildew** and **Botrytis.**

Sustainable - This spray program was formed utilizing LIVE's certifiable Integrated Pest Management (IPM) philosophy. Sprays are typically done every 2 weeks early in the season and transition to longer spray intervals around bloom based on the chemistry being used.

Organic - Follows many of the same concepts as the sustainable program but uses all organic compounds. Sprays are typically done every 7-10 days throughout the entire growing season. This program is also more expensive mainly due to needing more sprays to provide a similar level of protection.
Our focus is to use a rotation of fungicides in conjunction with the other cultural management practices to reduce the risk of infection and disease resistance. We believe prevention is the best practice for clean fruit.

Invertebrate Pest Control: Currently **mites** are our biggest insect pest problem in the valley for grapes. Our regimen of sulfur and oils are used early in the season for control. During the growing season we will set out pheromone traps to reduce the yellow jacket populations as well.

Vertebrate Pest Control: Most of our vineyards have at least one kind of animal pest problem. Seven foot tall woven wire deer fencing is used to keep out the big pests like deer and elk. Netting is our most common form of combating damage from birds. This net can be reused for several seasons, it is safe and best of all it does not create any loud or unwanted noise. Voles are another common pest that often needs to be addressed. As of now we poison bait the voles as needed. This is a non-organic option. Cultivation can be another useful tool to mitigate vole problems.

Weed Control:

Sustainable **-** For chemical control **Glyphosate** and **Glufosinate Ammonium** are used as the two herbicides in the vineyard. Both of these are approved by the LIVE certification. Both chemicals are very safe and have a low toxicity to humans and no residual effect to the environment. These chemicals are used to remove weed competition under the vine row during the dormant season and during the growing season. In general we do not use any soil active or pre-emergent herbicides. In total these chemicals will only be applied a maximum of two to three times throughout the entire year. Later in the growing season we will utilize hoeing to control remaining weeds and debris to keep the vineyard clean.
Organic - Non chemical cultivation with a tractor implement under the vine and/or hand hoe. Both options are effective alternatives when herbicides are not used, however they can be very costly and not always safe for the vines.

We take pride in managing the finest vineyards, for premier Oregon Pinot Noir and Chardonnay. We will continue an organic farming to keep our vines producing premium fruit for decades to come.