

Humidifier

Silver Oak Cellars Uses MeeFog™ Humidification to Reduce Evaporative Losses

BENEFITS

- Reducing evaporative losses during aging process
- Low maintenance
- Less power usage than other types of humidification systems

CHALLENGE

Silver Oak Cellars discovered that during periods of low humidity, the oak barrels were drying out during the aging process causing higher levels of evaporation and the need to top off barrels.

SOLUTION

Installing a MeeFog™ humidification system with fogging nozzles near the ceiling of each of the barrel rooms allowed the winery to control the humidity in the rooms, reducing evaporation and the need to top off the barrels.

You can visit your local Trader Joe's and pick up a bottle of Charles Shaw wine (also known as Two Buck Chuck) for less than three dollars. Or you can make a pilgrimage to California's Napa Valley, view the vineyards, meet the wine maker and spend a hundred times that amount on a bottle of premium vintage. The difference between the two lies in the careful attention to details required to produce a premium product.

Since 1972, Silver Oak Cellars in Oakville, California has been producing premium quality Cabernet Sauvignon. To maintain the quality of the wine, as well as minimize evaporative losses, Silver Oak uses a MeeFog™ humidification system in all of its barrel rooms. Silver Oak ages its wine for about 25 months in barrels made from American oak.



Installation Challenges and Specifications

The Most Stable and Energy Efficient Way to Humidify

"Originally the winemaker tried six or eight different brands of barrels with different types of wood," says Greg McClain, Maintenance Manager for Silver Oak Cellars. "He liked the way the wine aged in American oak barrels tasted, so we have been using them from day one. A few other wineries are starting to use American oak as well."

During this time, unless the humidity is controlled, the oak will dry out allowing some of the wine to soak through the wood and evaporate. In addition, the wood shrinks as it dries, loosening the seals between the staves making up the barrel, increasing the loss of wine. With the wine selling for around \$100/liter, any loss is costly. To address this issue, Silver Oak installed a MeeFog™ humidification system at both Oakville and Geyserville to maintain the moisture in all the barrel rooms.

"Mee makes a simple, automatic, self-contained system to control humidity during the aging process," says Greg McClain. "It is hung from the ceiling and out of the way, so when we bring tours through the facility everything looks nice."

THE INSTALLATION

Silver Oak has one MeeFog™ system in place at its 65,000 square foot showcase facility in Oakville and a second one at its winery in Geyserville. The MeeFog™ system in Oakville has a single variable speed pump to humidify all four barrel rooms. Each of the barrel rooms has a sensor to monitor the humidity, and when it goes out of range, the pump will start up and run at the speed needed to bring the humidity back to the set point.

"We have 8 inch thick concrete walls in the barrel room," he says. "Once the temperature and humidity reaches the set point in there it stays pretty constant unless we are opening and closing the roll up doors and going in and out a lot."

The pump sends up to 0.6 gallons per minute of 1000 psi water through stainless steel tubing to a set of 12 nozzles

spaced throughout the barrel room near the ceiling. The impaction pin nozzles convert that water into a fog of minute droplets which quickly evaporate so there is no problem with water pooling or mildew growth.

"We stack our barrels fairly high here so they are close to the nozzles," says McClain. "Sometimes the barrels on the top row get a little moist, but with the cooling fans running they dry right up."

There was one other element that Silver Oak needed to put in place. Installing a reverse osmosis system to reduce dusting. The filters catch any particles and remove them from the water so they wouldn't clog the fogging nozzles, but when the water evaporates, the silica precipitates as a fine white powder on the barrel rack surfaces. Other than that, McClain says that the MeeFog™ system operates well.

THE COST AND BENEFITS ANALYSIS

With the MeeFog™ system in place, Silver Oak's staff spent less time opening and topping off the barrels. The real savings, though, come from preventing the evaporation of the premium wine Silver Oak produces.

"Keeping the humidity at the correct level in the barrel room helps prevent evaporation so we have to do less topping," says McClain. "If we didn't have the MeeFog™ humidification system in there we would need to be topping the barrels every month and would be losing a lot of wine through evaporation. Now we are down to topping the barrels once every four to six months."

McClain says that the MeeFog™ system does its job well and without a lot of attention from the maintenance staff.

"It's a low-maintenance system. We just have to change the filters occasionally and service the pump every two years."

— Greg McClain, Silver Oaks Cellars Maintenance Manager