



Chateau Ste. Michelle Installs New Optical Sorter for MOG Removal

At Chateau Ste. Michelle of Washington state, quality is the driving force in everything they do as they combine Old World winemaking traditions with the best New World innovations. When the opportunity came up for Chateau Ste. Michelle to participate in the field trials for Key Technology's VitiSort[®], the new optical sorter for removing MOG from red wine grapes, they jumped on it. They've now used VitiSort[®] on a trial basis for two crushes at their Canoe Ridge Estate location, and have decided to purchase this affordable sorting system before the 2014 crush.

"As a winemaker of premium wines, I want only grapes fermenting. By removing as much MOG as possible, you take out the green bitterness. It's hard to make a big step in quality improvement, but Key Technology's VitiSort[®] did exactly that for us," said Ray McKee, Red Winemaker at Chateau Ste. Michelle.

"We taste-tested the first trial about ten months after harvest – countless trials, side by side, with the exact same grapes from the same block, with VitiSort[®] and without. The results exploded out of the glass. There is another level of complexity to this wine – there is a different expression – a density and purity without the background noise from stems and leaves," said McKee.

"VitiSort[®] eliminates the need to do hand-sorting. With it, we're removing 99.9 percent of the MOG from both hand-picked grapes and machine-harvested grapes. We're sorting 4 to 5 tons of grapes per hour with only three workers running the entire receiving operation. But most importantly, we've now got a new level of quality control that allows us to produce a very rich and dense wine that doesn't have the tannin from stems and leaves," said Chris West, Chateau Ste. Michelle's Canoe Ridge Estate Winery Cellar Master.

Canoe Ridge Estate, Chateau Ste. Michelle's red winery located in Eastern Washington, uses VitiSort[®] to sort the reserve grapes for their Artist Series, Ethos and Single Vineyard red wines, which totals 14 percent of the grapes crushed and fermented at that winery and includes Cabernet Sauvignon, Merlot and Syrah and, to a lesser extent, Malbec, Grenache, Bordeaux and Cabernet Franc.

VitiSort[®] is a two-stage system that combines a patent-pending mechanical MOG removal shaker and optical sorting with an integral juice recovery system. It removes any unwanted objects such as insects, skins, raisins, shot berries, stem jacks, petioles, leaves and other MOG from the product flow to better control the



quality of must going to the fermentation tanks. "On hand-picked fruit, we see 7.15 percent reject, on average, coming from VitiSort[®], which is all MOG. That's in addition to the stem that's removed by the destemmer, which averages about 5 percent," said West.

"With our reserve grapes, we maintain a small winemaking mentality. If we receive 500 different blocks of grapes, we'll have 500 lots later. Whether you're big or small, it's very simple; it comes down to having the right receiving equipment," noted West.

Chateau Ste. Michelle

“There are three optical sorters for red wine grapes in the world. When we looked, VitiSort® cost 50 percent less than the others after the Euro-to-dollar conversion. It’s a rugged machine with a very elegant and simple operation.”

The stainless steel VitiSort® is compact, mobile and processes up to 5 tons per hour. At Chateau Ste. Michelle’s Canoe Ridge Estate, half-ton bins of hand-picked grapes are dumped onto Key’s GRIP system, a receiving table that automatically meters out an even flow of clusters to the destemmer. VitiSort® rolls into position under the destemmer so fruit automatically flows from one machine to the next.



VitiSort® begins with a vibratory conveyor that gently shakes the grapes to separate MOG, which falls through slots along with juice. MOG is accumulated on a sloped surface for disposal, and juice is automatically recovered for reintroduction to the must. Singulated grapes freefall from the end of the conveyor into the sorter, presenting a “sheet” of product that allows a camera to inspect each grape. The sorter quickly analyzes the images, comparing each object to previously defined accept/reject standards. When unwanted objects are identified, the sorter activates the ejector system, which is made up of a series of air jets that span the width of the system. While still air-borne, the air jets pinpoint MOG to remove it from the product stream. Good grapes pass from the sorter into a trough or screw conveyor for delivery to the fermentation tank.

“We produce some very popular wines because, across the price spectrum, we deliver quality and value. Canoe Ridge Estate wines have earned scores of 90 or higher on more than 40 of our wines and our Cabernet Sauvignon and Merlot have each received Wine Spectator ‘Top 100’ honors. Given our popularity, we need to grow, but we need to maintain our high quality at the same time. That’s what motivated us to look for this new technology,” noted McKee.

Previously, Chateau Ste. Michelle’s Canoe Ridge facility didn’t separate reserve grapes from regular grapes at receiving. It all went to a large-capacity MOG removal system, also from Key Technology, which handles 60 to 80 tons per hour. West explained, “This is a two-level mechanical system that removes large and small MOG. It’s very effective. It removes an average of 2.76 percent MOG at Canoe. But VitiSort®, with its mechanical MOG step and optical sorting step, brings MOG removal to a whole new level with 7.15 percent MOG rejected, on average.”

Quality and value are cornerstones at Chateau Ste. Michelle, which was founded in 1934 and has grown to become the largest producer of high quality wines in Washington state. Today, they are one of the few premium wineries in the world with two state-of-the-art wineries, one for red and one for white. The winery owns 3,500 acres of vineyards in the Columbia Valley of eastern Washington, including Canoe Ridge Estate and Cold Creek, which are both LIVE and Salmon-Safe certified.

Chateau Ste. Michelle

“Once harvest hits, it’s ‘go’ time and everything has to perform,” said West. “The installation of VitiSort® was plug-and-play and the reliability is fantastic. It’s built very well and has only a few moving parts. There is very little that can break because it uses gravity. The other sorters we looked at have belts that accelerate the product to high speeds. VitiSort® has a lot less parts to break and the parts cost less.”

“Every variety is different; every block is different. When we set VitiSort® up to handle a new block, we store that program in its memory so we can refer back to it,” said McKee. “For example, Cold Creek Estate is a very hot site so berries come in smaller than average. If we want to pull the raisins out – they have good color but are dehydrated – we simply adjust the pixel size that defines a good grape. We can also change the colors to reject. These adjustments are made on the control panel in about 10 seconds; there are no mechanical changes to make. It’s very easy to use.”

“We did experience a 7 percent yield loss with VitiSort®, but it’s all MOG that’s removed, so we wanted it,” said West. “The yield we’re achieving with VitiSort® is totally acceptable. The integrated juice recovery system helps – that juice has a lot of value in red wine making.” McKee added, “The sorter is very gentle too. With hand-picked grapes, we end up with 70 percent whole berries after sorting. That lets us decide to crush or not, depending on what we want. You don’t usually have that level of control.”

“VitiSort® has changed the business of sorting grapes. Because the price is so affordable, it makes optical sorting accessible to most wineries. The result is an extremely high quality grape that is practically perfect. This is an important new tool to increase quality on behalf of customers,” concluded McKee.



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