



Jackson Family Wines Improves MOG Removal with Optical Sorter from Key Technology

Kendall-Jackson, along with the other wineries from the Jackson Family Wines portfolio, shares a proud legacy of quality instilled by their founder, Jess Jackson, which continues to permeate every aspect of the business. Focused on delivering exceptional quality at every price level, Jackson Family Wines constantly works to improve operations and contain costs. With these goals in sight, they became the first winery in the world to use Manta®, the highest capacity optical sorter from Key Technology, to automate MOG (material other than grape) removal.

“We used to rely on mechanical shakers and manual inspection to remove MOG from our Pinot Noir grapes,” said Randy Ullom, Winemaster for Jackson Family Wines. “With Manta, MOG removal is better because the machine is faster and more consistent than manual sorting. We’re enhancing the quality of the harvested grapes going into the fermenter. Manta gives us an added edge to elevate the quality of our wines.”



Key offers several optical sorters for wineries wanting to reduce MOG in their fermentation tanks. The Manta 2000 series sorter at Jackson Family Wines features high-performance color cameras and lasers that inspect 15 tons of harvested grapes per hour on its 2-meter (79-inch) wide scan area. Jackson Family Wines selected Manta because it matches their production requirements with the highest throughput, but Key’s sorters can be scaled to fit the needs of much smaller facilities too.

“We decided that, to do it right, we’d go with the supplier that has the most experience,” noted Ullom. “Key has more than 60 years of experience supplying food processing equipment and they are a leader in sorting technology. We chose Key based on their



knowledge, service, support, and integrity.”

At Jackson Family Wines, Pinot Noir grapes are harvested and transported to their Monterey County, California winery. There, grapes are dumped into a hopper that meters product to an Iso-Flo® shaker from Key that mechanically separates fines and leaves as well as large pieces of MOG while retaining juices. The shaker spreads the product to present it to Manta for more thorough MOG removal.

As grapes pass through the sorter, they are scanned by cameras while still on the conveyor belt. They are then launched off the end of Manta's belt for in-air viewing by the lasers. Using Key's proprietary image processing technology, the sorter quickly analyzes the images, comparing each object to the winemaker's previously defined accept/reject standards. When MOG or a defect is identified, the system activates the close-coupled high-speed ejector system, which is made up of a series of air jets spaced 8 mm apart that span the width of the system. While the piece of MOG or defect is still air-borne, the air jets pinpoint the object to reject and remove it from the acceptable product stream. The resulting pristine grapes are then accumulated in a 1-ton bin and taken to the fermentation tank.



The sorter's color cameras inspect each object based on color, size, and shape. The lasers detect differences in the structural properties of the objects. Combining cameras and lasers on one platform maximizes the sorter's capacity to remove any unwanted objects including insects, skins, raisins, "shot" berries, stem jacks, petioles, leaves, unripe berries, rotten or molded berries, and other MOG from the harvested grapes.

"We've seen a dramatic difference in MOG levels since we started using Manta. It's stunning, actually," said Ivan Giotenov, Winemaker at Carmel Road Winery and Director of Winemaking at the Jackson Family Wines' Monterey County winery. "It would be very impractical to attempt to achieve this level of MOG removal with manual inspection."

"As it turns out, we handed Key a very difficult situation," explained Ullom. "Pinot Noir is a very tricky grape to work with in that it requires very gentle handling. Additionally, 2011 was a challenging Pinot Noir vintage and incoming MOG levels were much higher than usual. The fact that Manta satisfied us this year means it will likely exceed our expectations any other year."



Jackson Family Wines

Jackson Family Wines is measuring the success of Manta on its ability to remove MOG as well as uptime, throughput, and yield. “To date, this experiment has been a success. We’ve accumulated a great deal of data on what the sorter is achieving, and we’re happy with the results.”

To produce ideal wines, Jackson Family Wines is working to dial in the flavor profile by improving the control of what goes into the fermentation tanks. Currently, Manta allows the winery to set the accept/reject definitions for each type of object – increasing the removal of green fruit or desensitizing raisin removal, for example.

“Our next step is to use Manta to sort to the desired flavor window based on the density of each grape. We’ll continue to remove visual defects and MOG, but we also hope to optically measure flavor,” explained Ullom. “The lasers can be programmed to differentiate berries based on how ripe they are because the skin texture changes as berries ripen. If we define the flavor profile for a particular variety and vintage to be 26 brix, we will sort out nice looking berries that are 23 to 25.5 brix. We expect to work on that next year.” Being family-owned, Jackson Family Wines has the luxury of taking the long view.

“We are proud to be the first winery to use Manta. It is state-of-the-art technology that gives us an added edge in terms of quality,” concluded Ullom.

Published by:

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