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JOSEPH PHELPS VINEYARDS

New fermentors for gentle handling

BY Tino Vierro

Eight new red wine fermentation tanks, manufactured by Santa Rosa Stainless Steel (Santa Rosa, CA) were installed for the 2007 harvest at Joseph Phelps Vineyards (St. Helena, CA). The new tanks are outfitted for the gentlest possible handling of red wine during fermentation. Delestage is one part of the primary fermentation process.

Ashley Hepworth, associate winemaker at Joseph Phelps, learned about delestage during a 10-week working sabbatical in 2005, observing and participating in winemaking in Bordeaux. She was based at Chateau Angelus in St. Emilion, working with Merlot, Cabernet Sauvignon, and Cabernet Franc, and she visited several other Bordeaux producers.

"At Cos d'Estournel, I was impressed by the use of delestage, and the results they are achieving," she says. "In their tank room, they have much more dramatically 'pitched,' truncated tanks than I have ever seen."

Delestage involves removing all juice from the skins in the fermentor to another tank, then pumping the juice back over the cap. "The idea is to perform delestage during active primary fermentation and to break up the cap," notes Hepworth.

Dr. Bruce Zoecklein (Virginia Tech) reported in his *Enology Notes*, "Our delestage research from the 2000 season suggests that this procedure reduced the tannin concentration by 35%, reduced the monomeric anthocyanins by 15%, and increased the polymeric pigments by 59%, compared

to conventional fermentation lots. The significant difference in the large polymeric pigment (LPP) concentration, coupled with the reduction of seed tannins, helps to explain the sensory differences between delestage-produced and conventional punch-down fermentations.

"Delestage-produced wines are more fruit-forward and have a richer yet supple and integrated tannin structure. Due to the higher percentage of LPP, it is assumed that the color stability of the delestage wines will be greater as the wines age." (*Enology Notes* #23, July 2001, www.fst.vt.edu/extension/enology/EN/23.html)

Four straight-side, double-wall tanks and four truncated tanks (10-ton

capacity with completely insulated side walls, bottom, and top) were installed. Each tank has three glycol jackets — a 42-inch high upper "cooling" jacket, a 23-inch high lower "warming" jacket, and a 29 sq. ft. "warming" floor jacket.

The truncated tank measures 7.5 feet diameter at the top, and 8.5 feet diameter at the bottom. The advantage of the truncated tank shape, Hepworth notes, is that the cap breaks better with the wider surface area at the tank-bottom.

Each tank has a 12-inch diameter screen tube running the full height of the tank to a bottom valve, used to collect juice for pump-over without skins or seeds, and is also ideal for delestage.

There is a Waukesha model-2065, 3hp centrifugal pump for each tank. This small, gentle pump connects to a piping system with smaller than typical dimensions, intended for slower and more gentle flow of the juice during pump-over. Piping is a 2-inch diameter line from the bottom valve into the pump and a 1.5-inch diameter return line to the irrigator for pump-over, operating at 60 gallons per minute. Other red wine fermentors at Joseph Phelps have 2-inch lines for pump-over by a Waukesha-2085, 7.5hp centrifugal pump with flow rates of up to 110 gals/minute.



One of four new truncated tanks is placed by crane onto the tank pad. Photo by Fred Lyon.

WINEMAKING



Dedicated Waukesha centrifugal pump fitted to each tank provides gentle flow of juice at 60 gallons per minute.

The controller on each new tank is the TankNet system (Acrolon Technologies, Sonoma CA). The winemakers are very pleased to have automated

control of heating/cooling and pump-overs. The system can be set for all-heat, all-cool, or automated rotation of temperatures.



12-inch diameter screen tube inside tank collects wine with no seeds or skins for pump-over. (Photo by Fred Lyon)

In 2007, the tanks were filled only once as the winery is testing the design and functionality of the new tanks. In 2008, they hope to complete two fermentations per tank.

Cabernet Sauvignon grapes were sourced from three estate vineyards in Yountville, Rutherford, and west of Solsol Avenue (north of Napa). Grapes from each property were divided into straight tanks (for control), truncated tanks, and older conventional fermentors. The first harvest to go into the new fermentors came from the Yountville Vineyard at approximately 25° Brix.

Grapes were sorted and went through a Delta-E2 destemmer (18mm hole diameter cage) with an electronic variable speed control. About three



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Ashley Hepworth holds 36-inch irrigator used in pumpovers.

tons per hour of grapes were handled very slowly. "The rollers on the destemmer were set as wide as possible to pop berries, but not smash them," reports Damian Parker, vice president of production. A Waukesha-220, 4-inch positive displacement pump transferred the must to the fermentor.

At Joseph Phelps, the juice is left on the skins for about 20 to 30 days total skin contact. Winemakers typically do a four-day cold soak, then inoculate. Pump-overs are one to four times per day depending on the stage of fermentation.

Between 18° and 12° Brix, one complete delestage is done.

Joseph Phelps Vineyards usually macerates to or past dryness, though Hepworth says, "The decision on when to press off the skins is made by taste. In Bordeaux, my observation was that enologists perform more extended maceration than California winemakers tend to do."

The winemakers at Joseph Phelps eagerly await the results of their new fermentation system. Gentle handling and delestage should ensure a high-quality wine with enhanced color and soft tannins. ■

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