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EGG VATS: Concrete evidence

Winemakers from Austria to Chile are going to work on an egg to add complexity to their wines, reports *Sally Easton MW*.



The first egg vat was commissioned in 2001 by Michel Chapoutier, following discussions and design between Chapoutier and French vat manufacturer Marc Nomblot, whose company has been making concrete wine vats since 1922. The shapely historic connection to Roman amphorae was not coincidental.

The vats are made without using chemical additives, according to Nomblot, from washed Loire sand, gravel, non-chlorinated spring water and cement. The concrete is unlined and must be treated with tartaric acid solutions before use. Since 2001, Nomblot has sold some 800 of the vats, which are usually 6hl or 16hl in size.

Concrete has been used successfully since the 19th century for winemaking, but the egg shape itself is new. Regardless of shape, temperature fluctuation is quite small, although the concrete is liable to

crack if temperatures get too high.

A critical factor is a continuous flow of liquid. Biodynamic farmer Werner Michlits, of Meinklang in Austria, observed a temperature difference of around 1°C between the top and bottom of his eggs, which Michlits said enhances the slow, continuous flow of the liquid.

Gilles Lapalus of Sutton Grange Winery, who was the first to import egg vats into Australia in 2005, points out: "With this sort of shape there are no dead corners, so there is a better uniformity of the composition of the liquid, in terms of temperature especially." And he adds: "The fermentation kinetics seem more regular, and it's less reductive than stainless steel." However, he was quick to point out that he's done no strict comparisons.

Early adopter

Eben Sadie in South Africa was an early adopter, and has been using eggs for his white wines for eight years. He uses the 6hl size, in which he says the fermentation temperature is stable. Sadie explains that, in an ambient cellar temperature of 16°C, "My white fermentations are about 20°C without any cooling. I don't inoculate and natural ferments are cooler than yeast additions".

Explaining the effect of the circulation, he says it "adds more depth and structure to the wine, but doesn't let wines go flabby; they stay linear, dense and tight. It's finer stitching".

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Lapalus agrees, saying: "In my experience with Viognier, we can have long time on lees with a good control on reductive character, giving a lot of texture to the wine. And I don't see any effect on the acid profile."

A similar result has been seen at California's Spottswoode, which has been using egg vats since 2006 to create a blending component for its Sauvignon Blanc. Winemaker Jennifer Williams said she wanted "to increase minerality and weight in our white wines. Concrete preserves the natural character of Sauvignon while also adding richness and body. The [eggs] act like oak barrels in creating texture, [but] without imparting vanillin, spice, etc. They preserve fruit flavours and aromas like stainless does."

Another often-cited benefit is a micro-oxygenation akin to that seen with oak, without imparting oak flavour, and avoiding the reductive conditions of stainless steel. Sadie says: "I tried to find an alternative vessel to wood that could breathe, but that doesn't give taste of wood, which is not part of terroir. Concrete allows a higher level of purity, site and place."

Back in Australia, Julian Castagna has also started maturing his Viognier, which is used in the flagship Genesis Syrah. He says: "Concrete had a freshness that surprised me and I thought was really interesting." And for him this was enough to do his own experiments: "At the level of wine we make, to try and increase quality by even 1% is worthwhile. My gut tells me it will add another level of complexity."

For reds, maturation is the main use. Almost inevitably, Alvaro Espinoza was the first in South America to buy egg vats, in 2009. He has two 6hl vats, saying he is experimenting with the smallest ones because it is very expensive to move them from France.

He is working with Carmenère, saying: "I wanted to age the wine on its lees after malo. The lees are always in movement, like a continuous batonnage, because of the shape of the egg." However, Espinoza adds, it can nonetheless be difficult to clarify the wines, so he puts the wine in tank for three to four weeks afterwards, before racking.

"We did a tasting a few weeks ago. An egg tank can age better than a barrel," he says. "It shows very nicely with a lot of fruit flavours, without oak. But we also get a very good mouth development, round and soft."

Making the comparison with stainless steel, he adds: "The wine is evolved in terms of tannin structure. The wine increases in volume, mouthfeel and softness, and I prefer the sweetness of the wine." And, he says: "You don't have reduction in concrete – I haven't racked all year."

Michlits has also found that there is "nearly no evaporation of wine" in egg vats. Comparing Sankt Laurent in stainless steel, oak and concrete, he says: "Concrete had the best texture and mouth feeling; it was fuller, rounder, and with more complex, darker fruit. Wood gave more tannin structure; stainless steel was the lightest."

Apart from the cost, much of which is spent on transportation, the main drawbacks include the need to protect against acid corrosion. Castagna says: "Concrete is more work, but if you prepare it correctly it forms a skin. I can see that in our eggs already – a layer of tartaric acid which is forming on the inside. Within two to three seasons, the wine won't be in contact with concrete, it'll be in contact with tartaric acid. The shape will be the most important element of it. "

As to the science, the Geisenheim Institute has been leading the field with one experiment to date, which Dr Maximilian Freund calls neither representative nor science, comparing Rheingau Riesling in a 900-litre concrete

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egg (made by Michlits) and in a 900-litre stainless steel tank.

The experiment concluded that Rheingau Riesling in 2008 was not particularly well suited to concrete, as its pH was too low for unlined concrete, meaning the wine acids corroded the concrete. However, the concrete did not affect the sensory properties of the Riesling.

Two considerations

Freund explains that there are two considerations with egg vats: namely the concrete itself, and the egg shape.

Of the concrete he said that in regions with a higher pH and lower acidity, such as the southern part of Europe where mostly red wines are made, wine is not so corrosive.

On the shape, Freund says the single experiment didn't "see any difference in fermentation" between stainless steel and the egg vat. He also found no difference in yeast cell numbers and biomass between stainless steel and egg, but did find the length of fermentation in egg was longer, with a little higher residual sugar.

While eggs may be über-trendy and fun to look at, they are not the new wonder-drug of wine. Lapalus draws us back to reality: "I don't want to create an 'egg' wine – it's too much of a fashion. It's just a tool, not a magic trick. The important work is in the vineyard, then not to miss or destroy the potential in winemaking. The whole process is important – not only one element."

Sally Easton MW, 16.05.2011

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