

WineScan™ – from vineyard to bottle

One of the first users of the FOSS WineScan™ in Australia was Foster's Wine Estates in South Australia. Group chemist Eric Wilkes is now in charge of four WineScans. He explains how they are used throughout the wine production process to ensure consistent quality year-after-year.

Foster's Wine Estates is the largest premium wine company in the world with brands like Wolf Blass, Beringer, Lindemans, Penfolds, Rosemount and many more. A total of 24 wineries, 7 packaging facilities, 15,800h of vineyards and 350 million litres of wine produced each year speaks volumes.

Group chemist Eric Wilkes is in charge of 15 facilities with a total of four FOSS WineScans.

Three WineScans™ replaced 10 work stations

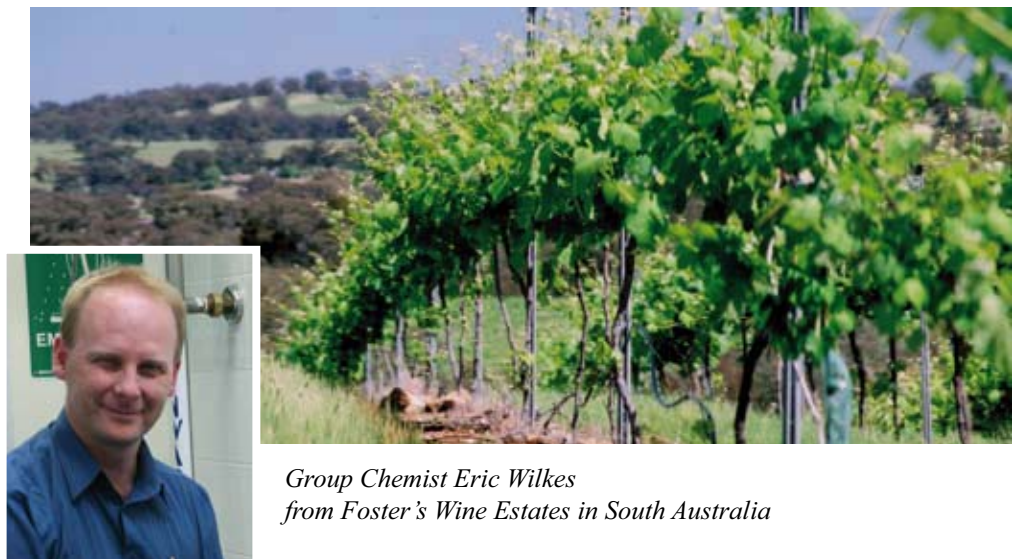
"We bought our first FOSS WineScan™ in 2002 and I believe it was the second WineScan sold in Australia. Today we have one WineScan at a grape receival station and three in labs. The three WineScans in our labs replaced 10 work stations and analyse three or four times as many samples as the 10 work stations did. On a quiet day we put 200 samples through an instrument."

Picking the right time to harvest

"We use our FOSS WineScans in all stages of the winemaking process. In the vineyard they help us determine when is the best time to harvest the grapes. By combining WineScan data with aerial and satellite imaging we have the potential to redefine vineyard blocks and optimise our fruit management schemes. This leads to more consistent and predictable raw materials...and better wine."

The right grapes for the right wine

"When the grapes are harvested it's off to the crusher. Here the WineScans help us direct crush to achieve a more uniform product. Fermentation is the next step of the winemaking process. Traditionally you mostly monitor sugars during fermentation but thanks to our WineScans we can monitor acids, nitrogen and alcohol as well. The feedback allows us to change ferment conditions to suit our intentions with the wine. When fermented the wine is allocated and blended, the potential ex-



*Group Chemist Eric Wilkes
from Foster's Wine Estates in South Australia*

ists to use the WineScan analyses to group wines in order to make more efficient use of available wine...a key factor in creating a profit as a winemaker."

Ageing gracefully

"At Wolf Blass alone we have 2,000 tanks and 30,000 barrels of storage capacity – a total of 80 million litres. It's obvious that constant integrity testing during maturing and storage is essential. Imagine having to downgrade a tank of wine from \$7 a litre to \$2 a litre...that's what sometimes happens without constant monitoring. Our WineScans allow us to carry out hundreds of analyses daily so they have saved quite a few litres of wine from going straight to the distillery."

Barrel to bottle

"Our work as winemakers isn't done until the wine is bottled and shipped... sometimes it even goes beyond that. We closely monitor the wine transfer to packaging and have implemented close to real time warning systems minimising loss and line downtime. Even when the wine has left our premises our WineScans come in handy. FTIR spectral fingerprinting can be used to combat substitution fraud".

The future? Even more analysis...

"I believe the wine industry is archaic compared to other food industries when it comes to using technology to improve product and profitability. Our challenge is to make more consistent, more stable, better and cheaper wine – tailored to the consumer. Technology has proven to be a great help and we plan to use it even more in the future. Within six months we will treble the daily sample throughput in our main laboratories – without adding to the four WineScans we have already. Further down the track we'll introduce in-line monitoring."

The human factor

"I don't think technology will ever render the human factor obsolete but it will play a much bigger part in our industry in the future. At this stage only fairly large wineries have access to instruments like the FOSS WineScan. But when they come out with options for smaller wineries, it will be increasingly difficult for wineries without modern technology to compete. I'm sure we'll see this happen in the next few years."

by Casper Reeslev, Ideas Unltd, on behalf of FOSS in the Pacific region