

What's that smell – is that Brett? Part 2

THERE HAVE BEEN a number of queries lately to the AWRI regarding *Brettanomyces*, or 'Brett', in wine, particularly the perception of Brett in different wine styles and at levels close to the sensory threshold. Here are some of those questions – other questions were explored in our January issue.

Do all wines have Brett?

At one time it was commonly thought that all red wines has Brett, just in different amounts. In the late '90s this was probably the case. At the completion of the AWRI's 10-year Brett Survey of Cabernet wines, the mean level of 4-EP in Australian Cabernet had dropped by a dramatic 90%, with a mean 4-EP of 107µg/L reported in 2005 vintage, and with 21% of all Cabernet wines measured from the 2006 vintage having 'not detectable' levels of 4-EP or 4-EG.

Are certain types of wines more likely to be affected by Brett?

Brett only needs 0.3g/L sugar to produce 1000µg/L 4-EP (AWRI publication #1227).

The average glucose+fructose levels in Australian red wines has increased to 2.1g/L (AWRI publication #1212) in 2008, from 0.5g/L in 1998. Increasing alcohol levels over time, stuck or sluggish ferments, or consumer-driven sweetness levels in reds, does mean red wines with some residual sugar are more at risk and might require filtration when previously they did not. Beware of unneeded or excessive use of yeast nutrient and nitrogen during fermentation which can leave residual nitrogen as a food source and might under some circumstances increase Brett risk, as well as increase the risk of other spoilage organisms growing.

The Brett zone is now known as that critical time from the end of primary and secondary fermentation until the point before sulfur dioxide (SO₂) is added. Leaving wines un sulfured for long periods of time, particularly during slow malolactic ferments (MLF), is the riskiest time for Brett growth. Ideally, MLF should be finished quickly. A molecular SO₂ concentration of 0.6mg/L is required to prevent Brett growth, and

is best achieved by one large addition of SO₂ post-MLF fermentation.

What is the best way to monitor or measure Brett?

You can routinely measure wines for the 4-EP marker compound, however this is expensive and only tells you once there is already a problem. A range of Brett sniff test kits are also available where wine is added to broths, and if the wine contains Brett yeast they will grow and produce 4-EP levels that can be readily detected sensorially. Routine microbiological testing is also costly and time consuming. An effective way of monitoring for Brett, and other microorganism growth during barrel ageing, is simply to measure the free and total SO₂ ratio. If Brett or anything else is active, then the ratio starts to increase. Ideal ratios of Free to Total SO₂ in a finished wine are 1:2 or 1:3 (e.g. 30:60 or 30:90). Once the level creeps up to 1:5, it suggests something is binding up the SO₂ and actions needs to be taken. Now that team AWRI has sequenced the Brett genome (AWRI publication

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#1450), future diagnostics tests are likely to become available including rapid PCR identification of yeast and tests to identify sulfite-resistant Brett strains.

If my wines have Brett, how do I treat it?

Prevention is better than cure. Routine sanitation will prevent population build-up in your winery. The key ways of spreading Brett around include wine transfers, putting clean wine into contaminated barrels, or vice versa, cross contaminating barrels via topping, sampling and barrel stirring. Affected barrels can be filled with hot water at 85°C for 15 minutes to sanitise the barrels. Mark these barrels and watch them carefully the next time they are used. Barrel disposal in some instances might be a safer option. Ozone and ultrasonics have also been reported as treatment options. Brett can be removed from wine by sterile filtration, and can be kept under control with effective SO₂ management. Reduction of 4-EP by reverse osmosis treatment is offered by several companies, or low levels of 4-EP can be blended away to levels below threshold.

And for the quirky question that people always seem to ask. Has the boy's name Brett declined in popularity since *Brettanomyces* became a nasty word in the wine industry?

Yes. Brett was a very popular first name

for men in 1980 peaking at #77, declining through the '90s and 2000s to # 508 in 2011 www.babynamewizard.com. While there is a clear correlation with the decline in Brett incidence over this period, there is no evidence to suggest this was a major driver in not naming children Brett!

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Adelaide to host global wine forum

Wine Australia and the South Australian Government will be co-sponsoring the 13th Australian Wine Industry Technical Conference, which will be held in Adelaide from July 28 to August 2, 2007.

The conference is a major event in the wine industry calendar, attracting delegates from around the world. It provides a unique opportunity for wine industry professionals to share their knowledge and experience, and to discuss the latest developments in wine production and marketing.

The conference will feature a series of technical sessions, workshops and seminars, covering a wide range of topics including wine production, wine marketing, wine distribution and wine quality. The conference will also include a social program, including a wine reception and a dinner.

The conference is a must-attend event for anyone involved in the wine industry. It provides a unique opportunity to learn from the experts, to share your own experiences and to build relationships with other industry professionals. For more information, visit www.wineaustralia.com.au.

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