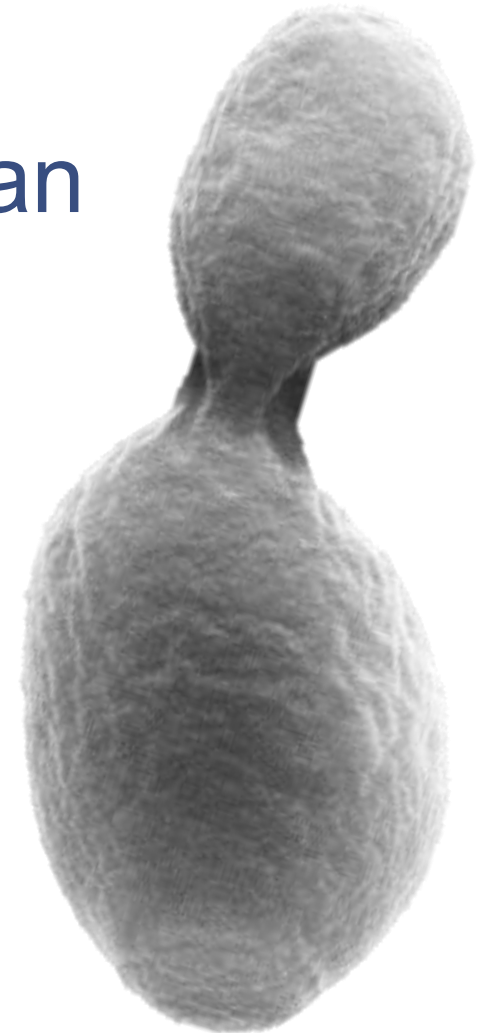


Good 'Brett' and other urban *Brettanomyces* myths

Chris Curtin – Research Manager



Three myths to bust today



The Australian Wine
Research Institute

1. 'Brett' can be good, or at least not all bad...
2. 'Brett' is no longer a problem, I don't need to worry about it...
3. 'Brett' can't happen in white wine because there aren't any precursors...

The philosophical debate about 'Brett'...



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Marc Perrin: “There is certainly some *Brettanomyces* in every natural wine, because *Brettanomyces* is not a spoilage yeast (as many people think), but one of the yeasts that exist in winemaking. Of course, you can kill all natural yeasts, then use industrial yeast to start the fermentation, saturate the wine with SO₂ and then strongly filter your wine. There will then be no remaining yeasts, but also no taste and no typicity.”

Pascal Chatonnet: “If *Brett* is able to grow in all red wines of the planet – and this is the case – then all the wines will have the same odour, which is a pity.”

Harpers (April 2003)

We've played the 'is this better?' game...



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+ a little bit of 4-EP

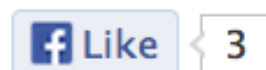
+ a little bit more

+ lots

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The misunderstood world of Brettanomyces

Friday 16 January 2009 | by Linda Murphy



What's that pong? LINDA MURPHY examines the much-maligned, misunderstood but, in some quarters, appreciated, world of Brettanomyces.

Darth Vader is My Lover: Revelations About *Brettanomyces* in Wine

22 comments

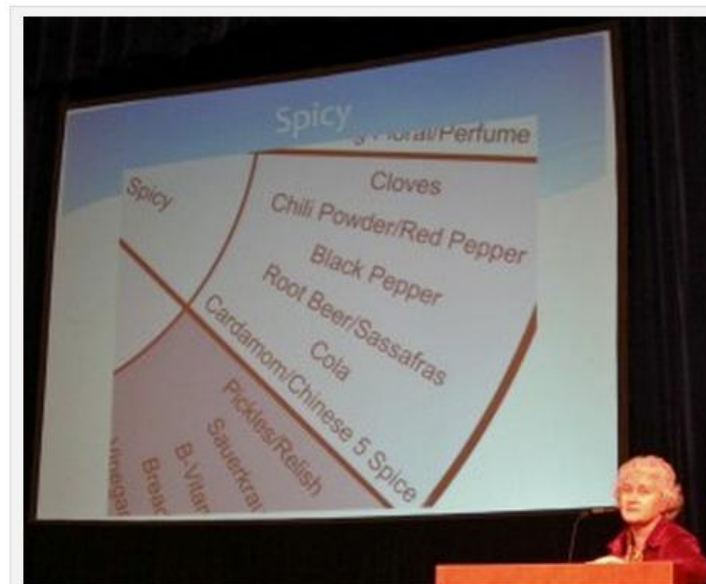
By **W. Blake Gray** on Jan 20, 2013

My whole wine world is shaken.

What does Syrah taste like? Are floral aromas pretty? Is a “typical Bordeaux” supposed to taste like medicine and ashes? I don’t know anymore.

I’ve been to a *Brettanomyces* tasting at UC Davis. I described it on Twitter as spending a day in a room full of laboratory-created stink cells. I couldn’t get the taste out of my mouth for hours.

But the psychological impact ... well, I may be scarred for life. As I said at the tasting, “It’s like learning that Darth Vader is my father.”



Lucy Joseph, of UC Davis, presenting the diverse aromas of brett.

Let's look at this a little differently



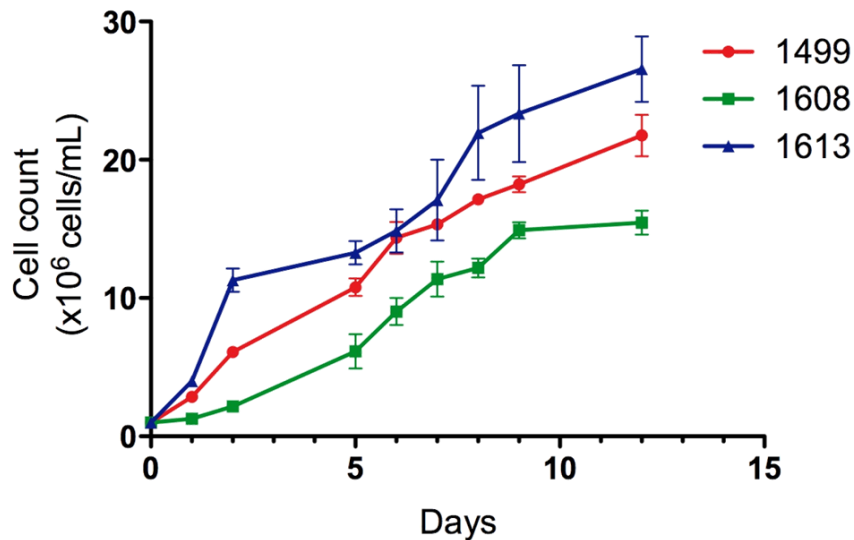
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They all grow in wine & make 4-EP



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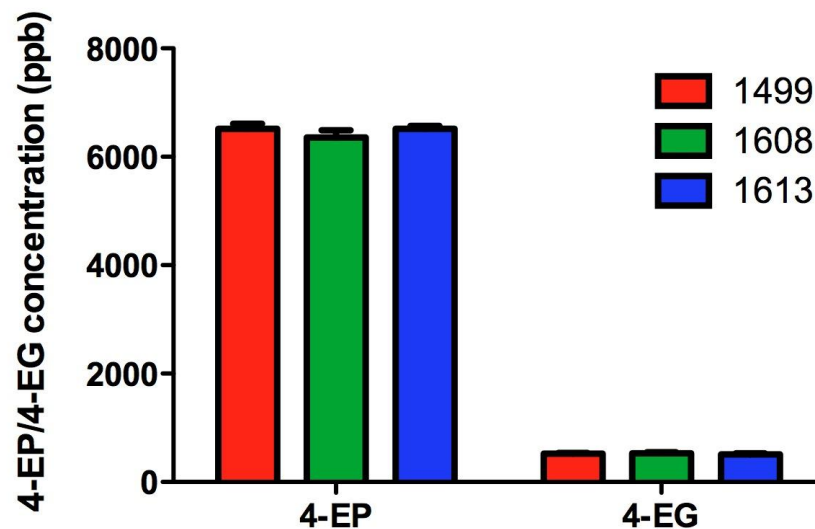
Cell Population



Geoffrey Langhans
Paul Grbin



THE UNIVERSITY
OF ADELAIDE
AUSTRALIA



Strain effects on fermentation volatiles



The Australian Wine
Research Institute

Product	AWRI 1499	AWRI 1608	AWRI 1613
Esters			
ethyl propanoate (µg/L)	30.8 ± 4.0 ^a	20.6 ± 2.8 ^a	20.6 ± 6.5 ^a
ethyl 2-methyl propanoate (µg/L)	76.0 ± 5.5 ^a	42.0 ± 1.6 ^b	27.0 ± 1.1 ^c
ethyl butanoate (µg/L)	57.1 ± 4.6 ^a	39.5 ± 2.9 ^b	40.7 ± 2.2 ^b
ethyl 2-methyl butanoate (µg/L)	44.3 ± 2.2 ^a	31.1 ± 1.7 ^b	21.3 ± 0.5 ^c
2-methyl propyl acetate (µg/L)	4.6 ± 0.8 ^a	2.1 ± 0.5 ^b	2.5 ± 0.4 ^b
3-methyl butyl acetate (µg/L)	-35.6 ± 1.8 ^a	-29.3 ± 1.9 ^a	-32.4 ± 2.2 ^a
phenylethyl acetate (µg/L)	-44.1 ± 0.3 ^a	-37.8 ± 0.1 ^b	-39.8 ± 0.3 ^c
ethyl lactate (µg/L)	564 ± 153 ^a	713 ± 60 ^a	607 ± 99 ^a
ethyl hexanoate (µg/L)	269 ± 13 ^a	209 ± 29 ^a	227 ± 22 ^a
ethyl dodecanoate (mg/L)	357 ± 113 ^a	353 ± 124 ^a	216 ± 101 ^a
ethyl decanoate (mg/L)	439 ± 68 ^a	62 ± 20 ^b	78 ± 31 ^b
ethyl acetate (mg/L)	51 ± 3 ^{ab}	46 ± 0.3 ^b	54 ± 1.2 ^a
Acids			
2-methyl propanoic acid (µg/L)	1224 ± 62 ^a	437 ± 48 ^b	361 ± 42 ^b
2-methyl butanoic acid (µg/L)	196 ± 9 ^a	155 ± 13 ^b	70 ± 6 ^c
3-methyl butanoic acid (µg/L)	435 ± 19 ^a	298 ± 36 ^b	256 ± 3 ^b
hexanoic acid (µg/L)	457 ± 93 ^a	351 ± 36 ^a	541 ± 103 ^a
octanoic acid (mg/L)	2.1 ± 0.1 ^a	1.9 ± 0.1 ^a	2.0 ± 0.1 ^a
decanoic acid (mg/L)	1.1 ± 0.2 ^a	1.4 ± 0.1 ^a	1.2 ± 0.1 ^a

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Do the wines differ sensorially?

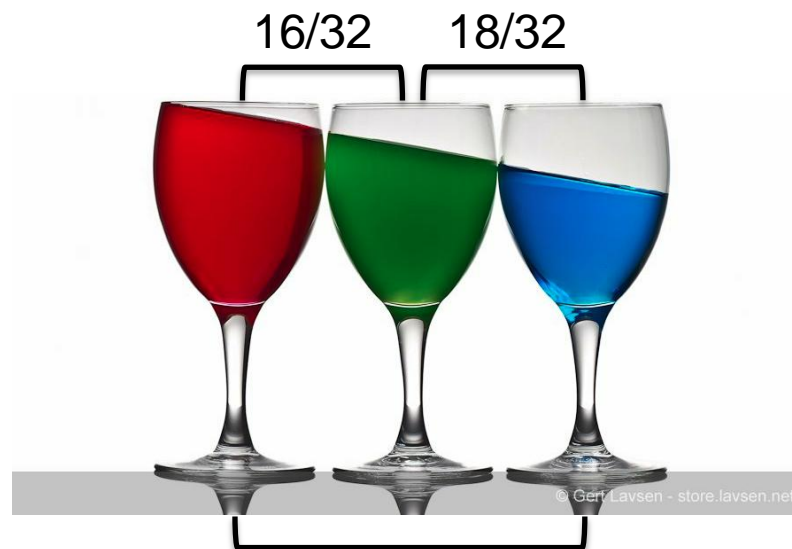


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(model) wine
made with each
strain



+ 300/30ppb 4-EP/4-EG



Do the wines differ sensorially?

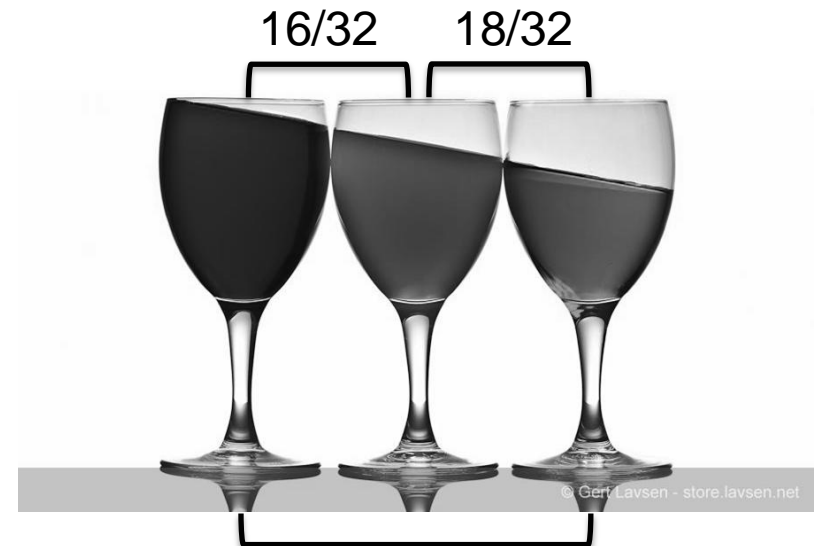


The Australian Wine
Research Institute

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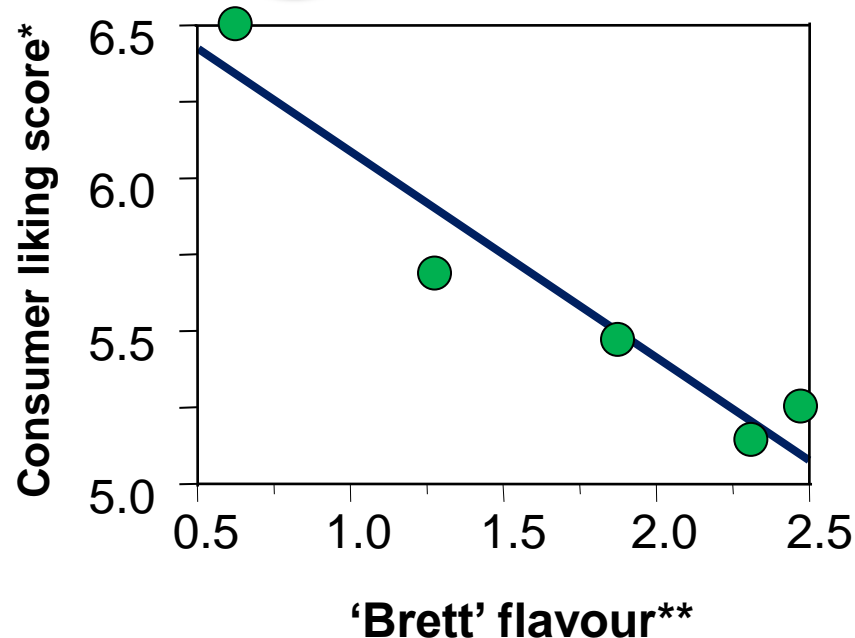
+ 300/30ppb 4-EP/4-EG



In the end, it comes down to the consumer



The Australian Wine
Research Institute



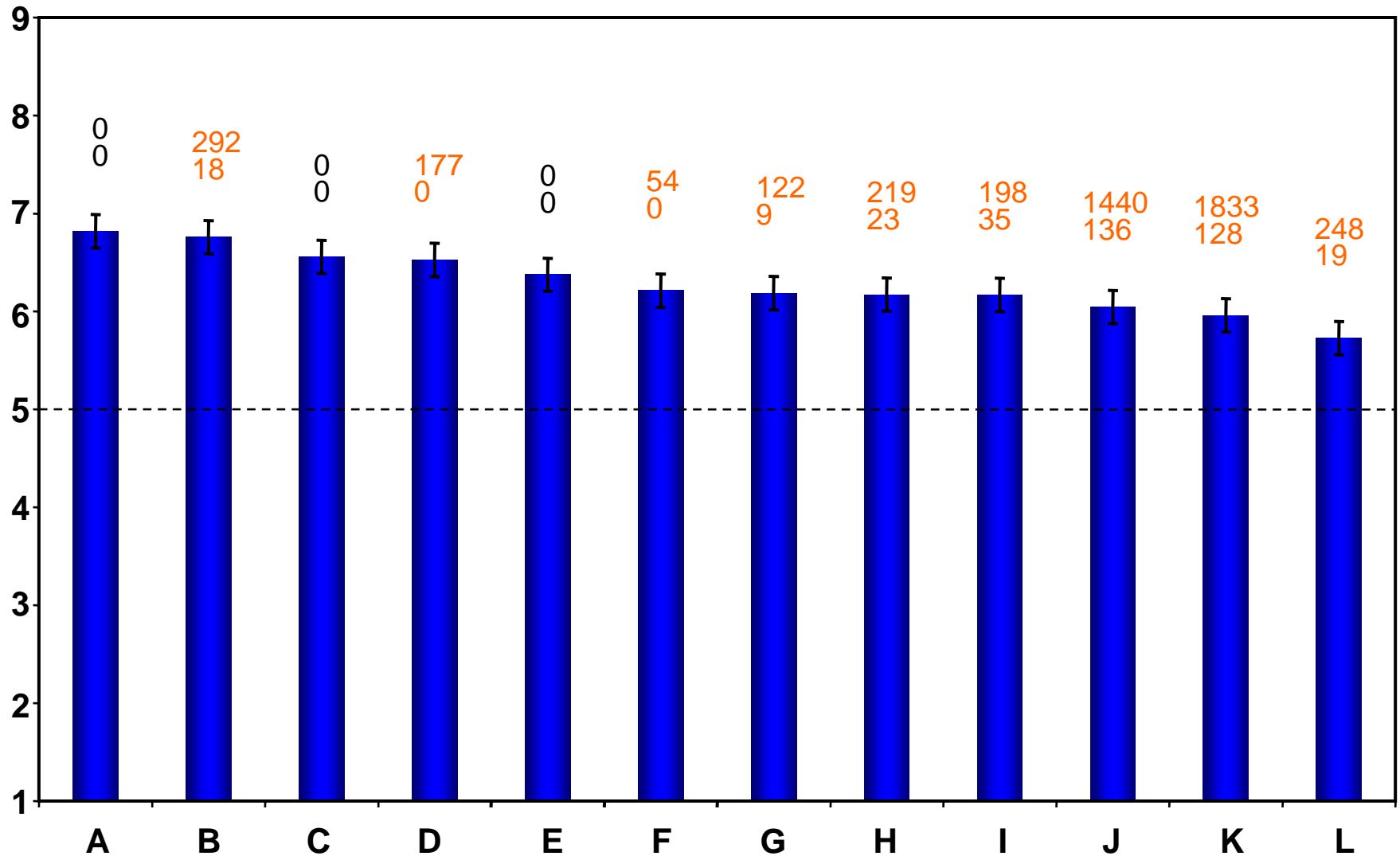
*104 Sydney consumers

** Spiked wines

Consumer liking scores (n=203, Adelaide)



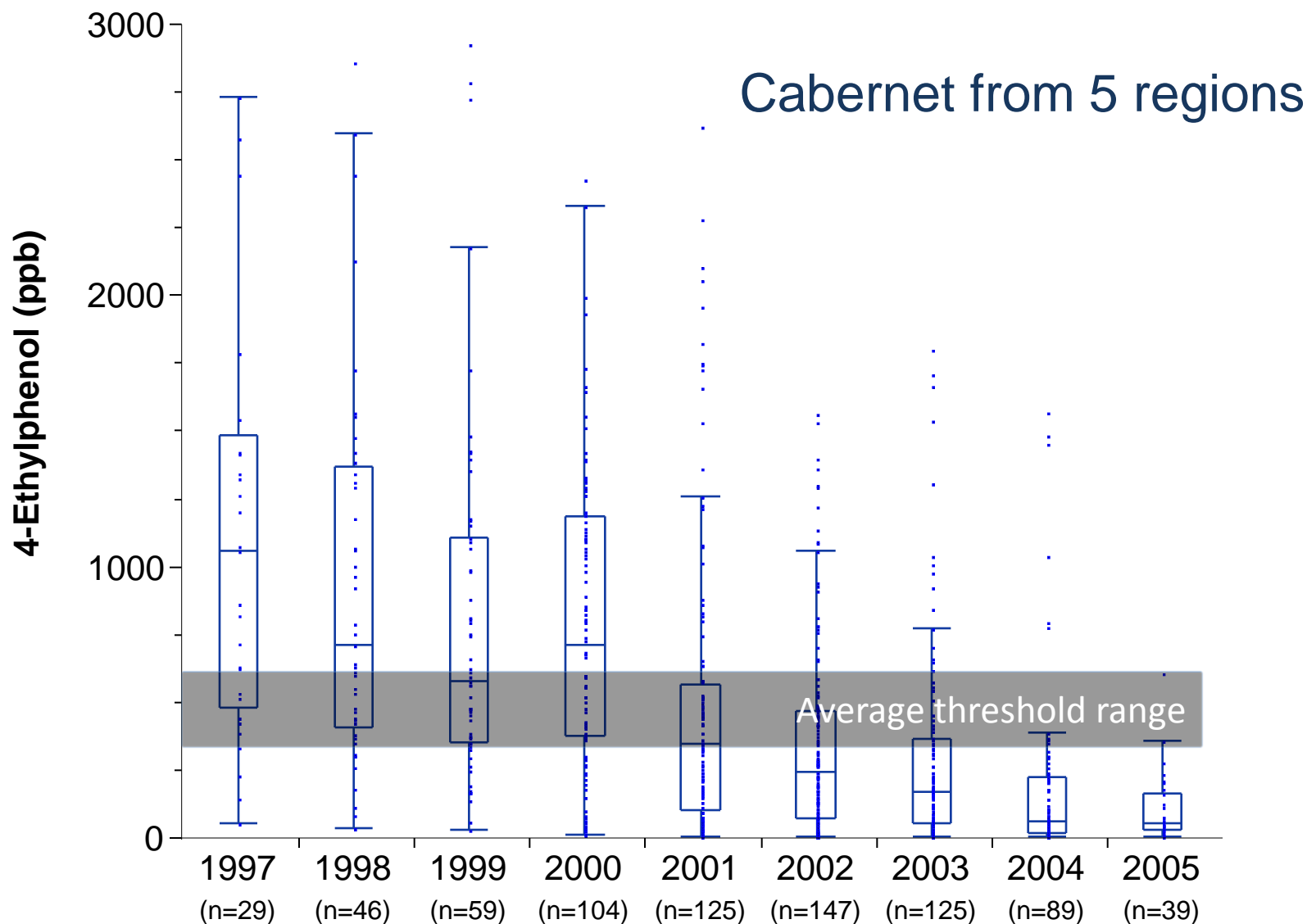
The Australian Wine
Research Institute



'Brett' is no longer a problem...



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FROM THE TASTING BENCH

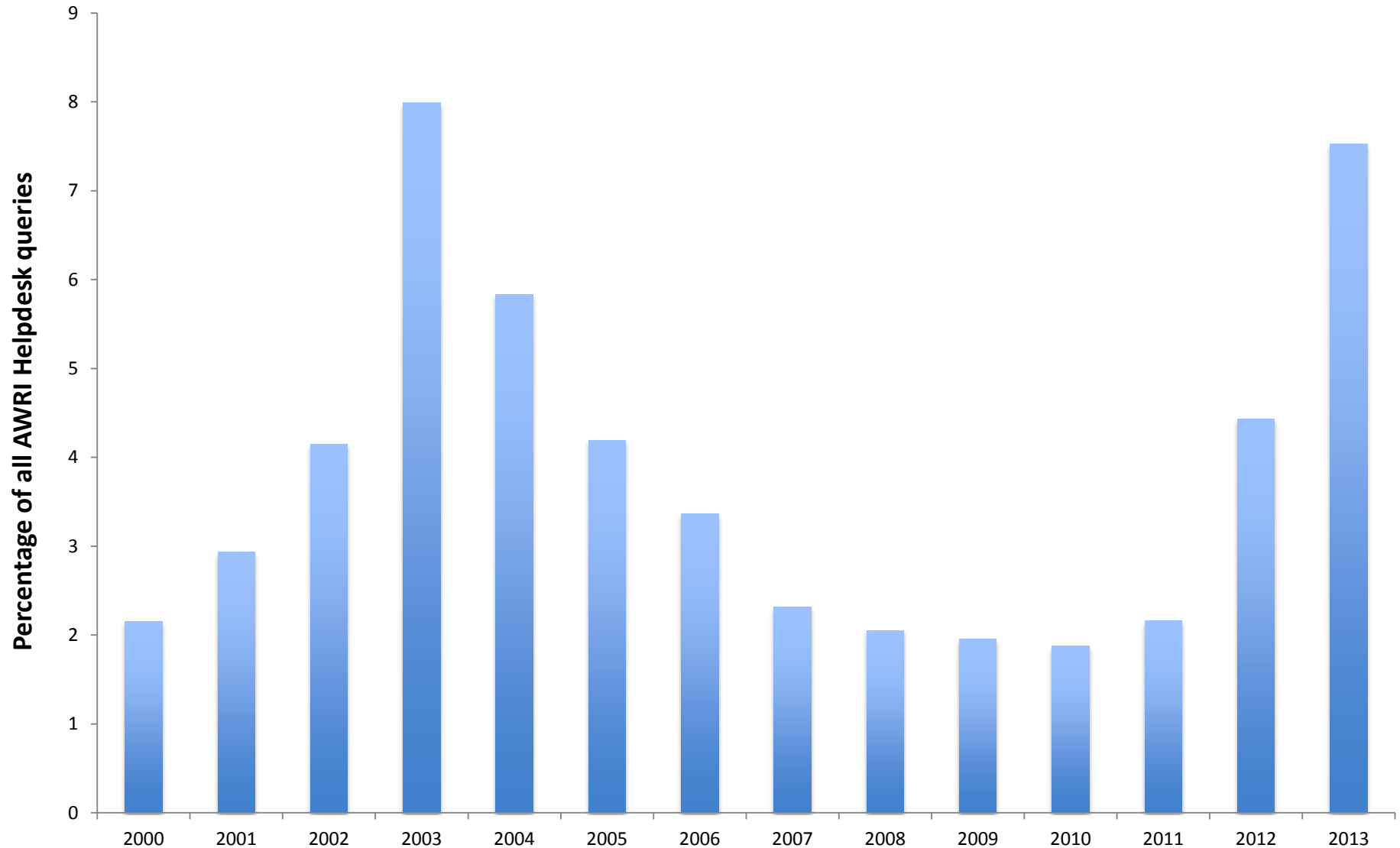
BRETT COMES BACK TO
HAUNT US

Nick Bulleid MW

'Brett' queries (AWRI Helpdesk)



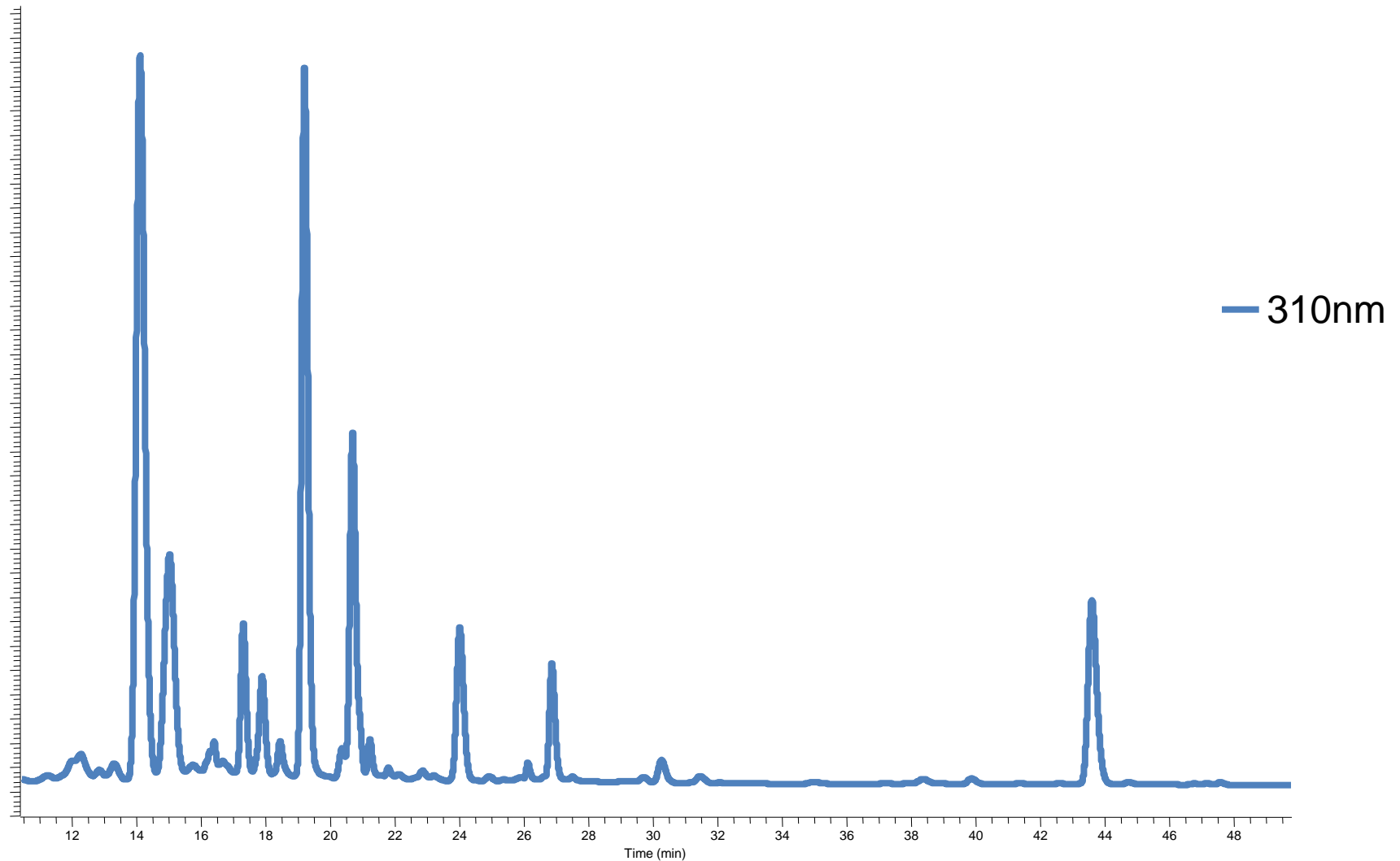
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'Brett' isn't a problem in white wine...



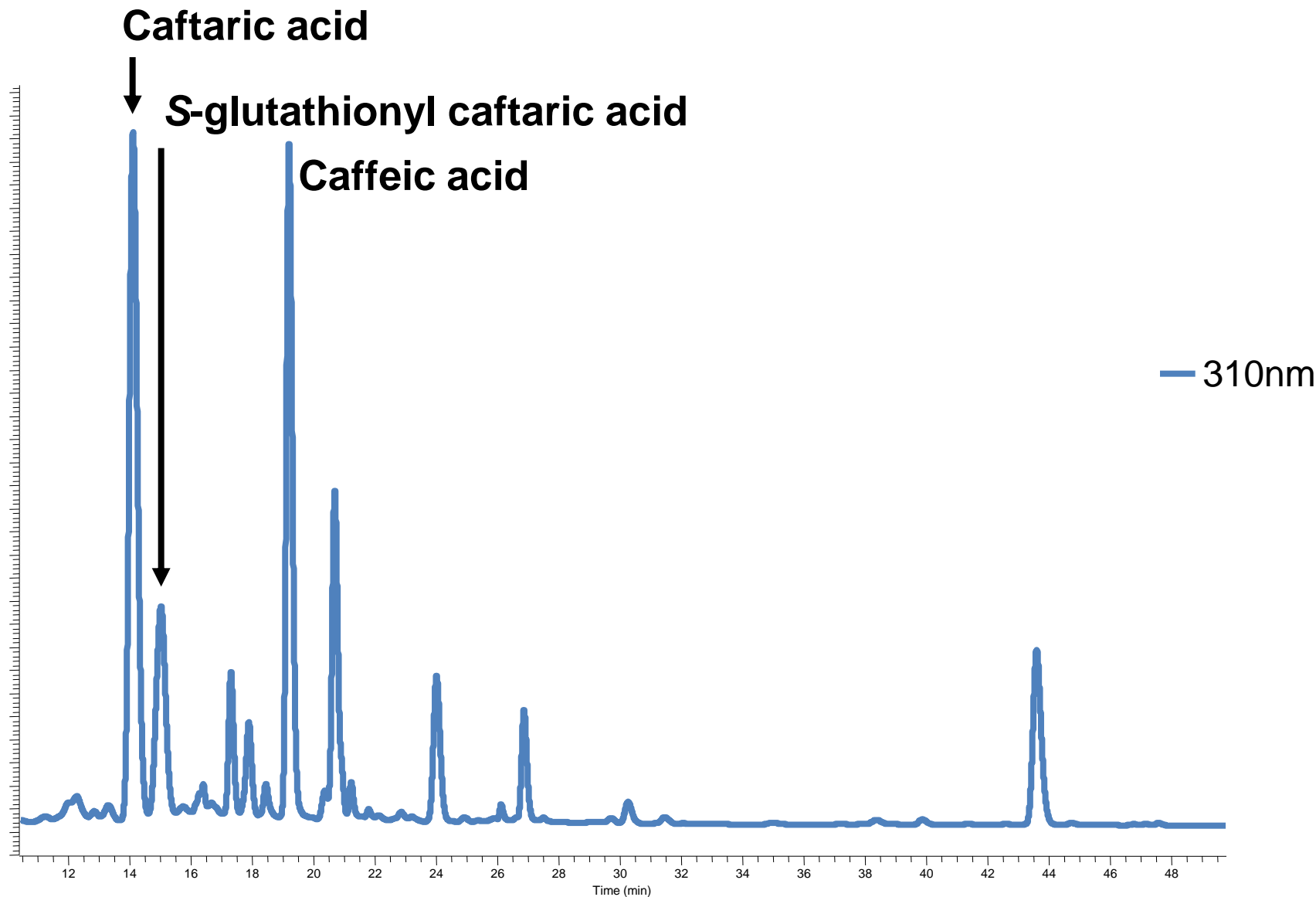
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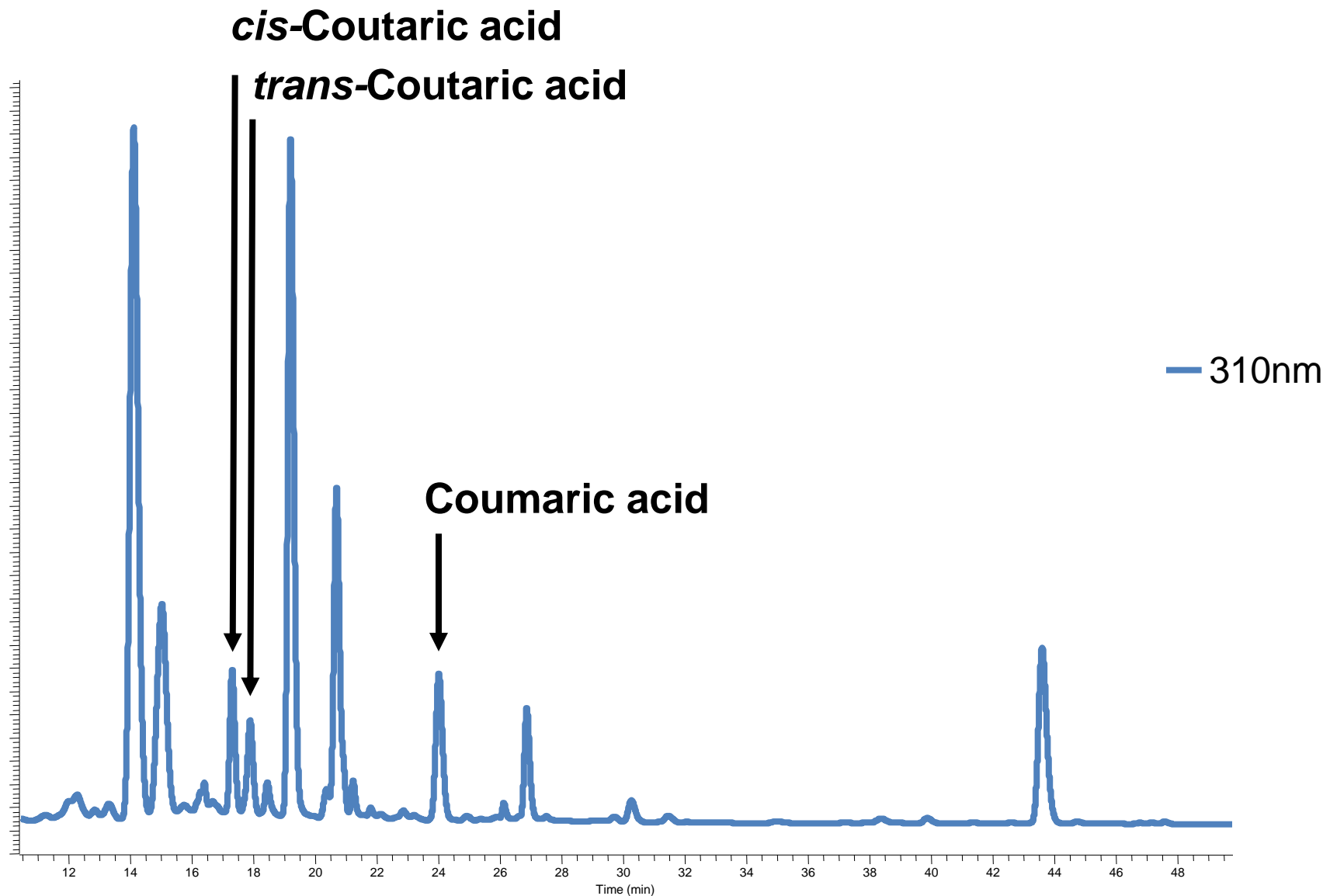
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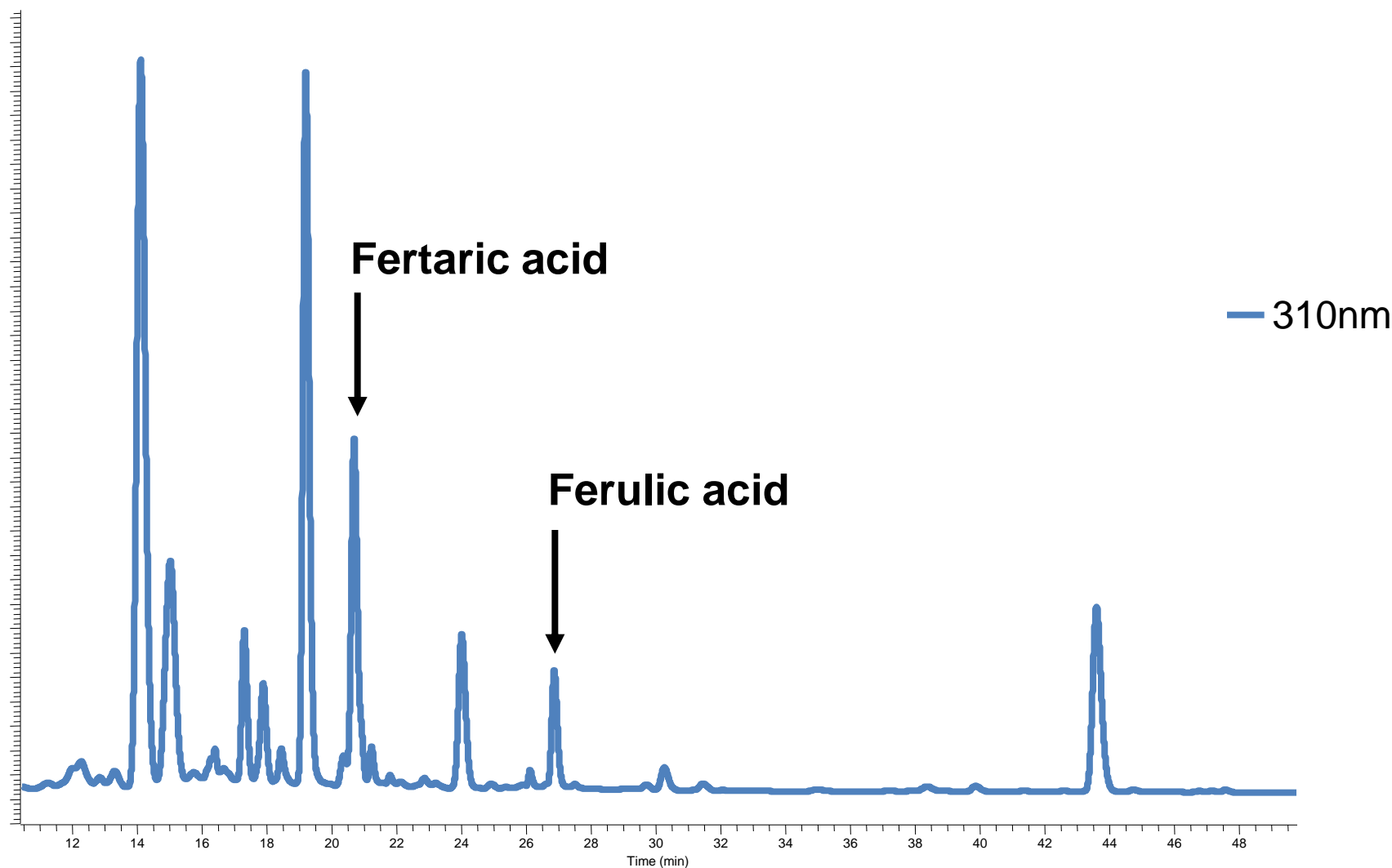
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'Brett' isn't a problem in white wine...



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From the expert:



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Research Institute

Chris,

These are the amounts Martin measured in the 2010 white wine phenolics trial wines. 3 varieties each from a different vineyard made using 6 different juice extraction and handling treatments.

The concentrations are very low. Most of the phenolics are tartaric acid esters of these things and their derivatives rather than these free and easy types.

Anyway. These are the ones that were identified and measured in Ferulic acid equivalents.

Coumaric acid – 0-0.19 mg/L, Mean 0.07

Ferulic acid – 0-0.33 mg/L, Mean 0.08

Coumaric acid ethyl ester – 0-0.05mg/L, Mean 0.01

Ferulic acid glycoside – 0-0.8mg/L, Mean 0.10

Hope this helps.

Richard G.

Red wine surveys



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	Caffeic		Caftaric		Coumaric		Coutaric	
	Min	Max	Min	Max	Min	Max	Min	Max
(Pena-Neira, Hernandez et al. 2000) ¹	0	0.54	0.19	0.38	0.03	0.5	0.32	0.82
(Castellari, Sartini et al. 2002) ²	0.6	8.7	12	79	0	3.1	1.2	6.2
(Andrade, Oliveira et al. 2001) ³	0.7	4.06	1.61	11.37	0.21	7.47	0.09	6.84
(Gambelli and Santaroni 2004) ⁴	2.5	17.9	2.8	37.7	0.9	16	1.3	10.9

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BUSTED

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