

Rā Tuarua - Rāmere 18 Mahuru 2026

Day 2 - Friday 18 September 2026

Wāhanga (session) 2: Case Studies



VIRGINIA WILLCOCK

DISCOVER YOUR OWN PLOT SO YOU CAN MAKE WINEMAKING DECISIONS FOR IT



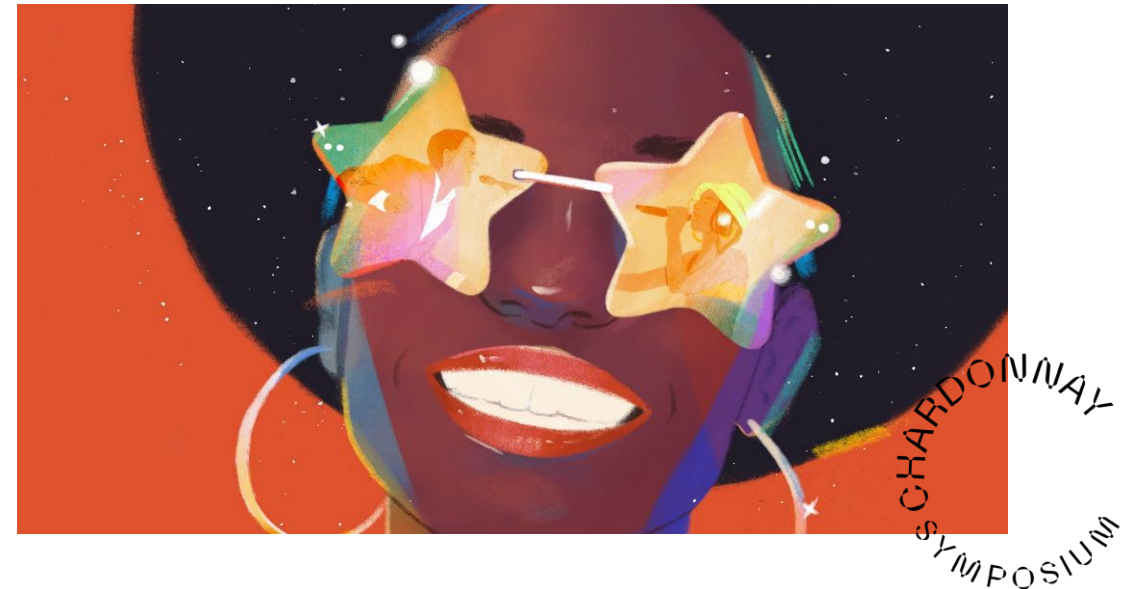
First Disclaimer, I love funky Chardonnay and I've always used the music definition rather than the strong unpleasant smell definition.

Most of my presentation will be about gaining individuality and complexity

Music Definition – Taken from the Documentary “We want the Funk”

Funk is about transcendent joy
It's a reminder it's a joy to be in this world
Funk is a spiritual experience
It connects to fear and desire

CHARDONNAY!!!!



CHARDONNAY SUCCESS EQUALS



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MARGARET RIVER

Creating your own uniqueness

- As a region (is this the clonal impact as well as site influence?)
- As a producer (are you funky or pure, big or light, woody or not etc)

Basics

- Find your roots – rootstock or not
- Find your ripeness for your clone
- pH and TA – to malo or not to malo
- Baume – potential alcohol
- Flavour profile
- Phenolic ripeness and impact toward solids in ferment
- Find the clone that makes the best Chardonnay in your region.



CHARDONNAY IS...

A chameleon...

Takes on its environment, in the field and also in the winery, possibly more than any other variety.

Therefore, our intervention as humans is critical.

For the viticulturalists:

Assume you already have Chardonnay in the ground...

- Are you over watering, overfeeding, changing the weight and composition of fruit? Do you need more?
- Are you spraying to kill all?... Including the good fungi?
Maybe growing fruit in the margins helps create the character?

If the overall results of trying everything eventuates in pulling out Chardonnay on that site or changing the clone by re-planting or grafting, then it's the ultimate in discovering a plot and it's worth.



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LET'S HAVE A LOOK AT GINGIN CHARDONNAY IN MARGARET RIVER



Serendipity?

Is this the thing that made our style?

Gingin Chardonnay bunch:

It's cute, it's tiny, it's delicious
and it's bloody expensive to grow.

- It's got weak roots
- Grafts well onto strong roots and keeps form.



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HISTORY



We believe Margaret River chardonnay is unique. If you taste Margaret River chardonnay against the best in the world there are flavours that are very specific to the region. This is due the climate and soil, but also the clone of Chardonnay grown in the vineyard.

The most commonly planted clone of Chardonnay in Margaret River is the Gingin clone.

It historically was thought that Gingin was just another term for the Mendoza clone, which is found on the east coast of Australia.

Using genetic sequencing data, new research by M.J. Roach, A.R. Borneman and S.A. Schmidt has shown that the Gingin clone is actually unique to Margaret River and had its own journey into Australia, at a different time to Mendoza.

The establishment of Chardonnay in Western Australia began in 1955 through a visit to the state by the prominent Californian viticulturalist Professor Harold Olmo (University of California, Davis). In 1957, 2 years after his original visit, Olmo sent 24 canes of 'Pinot Chardonnay' from UC Davis to the Department of Agriculture in Western Australia. This source material was planted at the Swan Research station near the town of Gingin, from which this clone would later derive its name. Today, the Gingin clone is one of the most prominent clones of Chardonnay in Western Australia (Cartright [1993](#), Fennessy [2018](#)) and forms the basis of some of Australia's best Chardonnay wine. (Roach et al, 2020) .

History and timeline of chardonnay clones into Australia. Provided by M.J. Roach. Show, Chardonnay-1 left for Mendoza in the 1930's, before being imported back to California in 1961 and named 'Mendoza OF Chard' . This clone was shipped to the east coast of Australia in 1969. On a separate voyage the Pinot-Chardonnay was brought into Gingin, Western Australia in 1957. From this point forward the clone was commonly known as Gingin in Western Australia. The Pinot-Chardonnay or Gingin clone from W.A. was taken from different source material than the Mendoza material on the East coast.

Given the mystery that surrounded the historical provenance and inter-relationships of the clones Gingin, Mendoza and OF Chard, the study done by Roach et al, applied whole-genome sequencing and the established clonal marker discovery methodology and genetic framework (Roach et al. [2018](#)) to attempt to determine the genetic relationship between these grapevine clones. (Roach et al, 2020) . What they discovered was the Gingin although, similar to OF-Chard and Mendoza is still quite unique.





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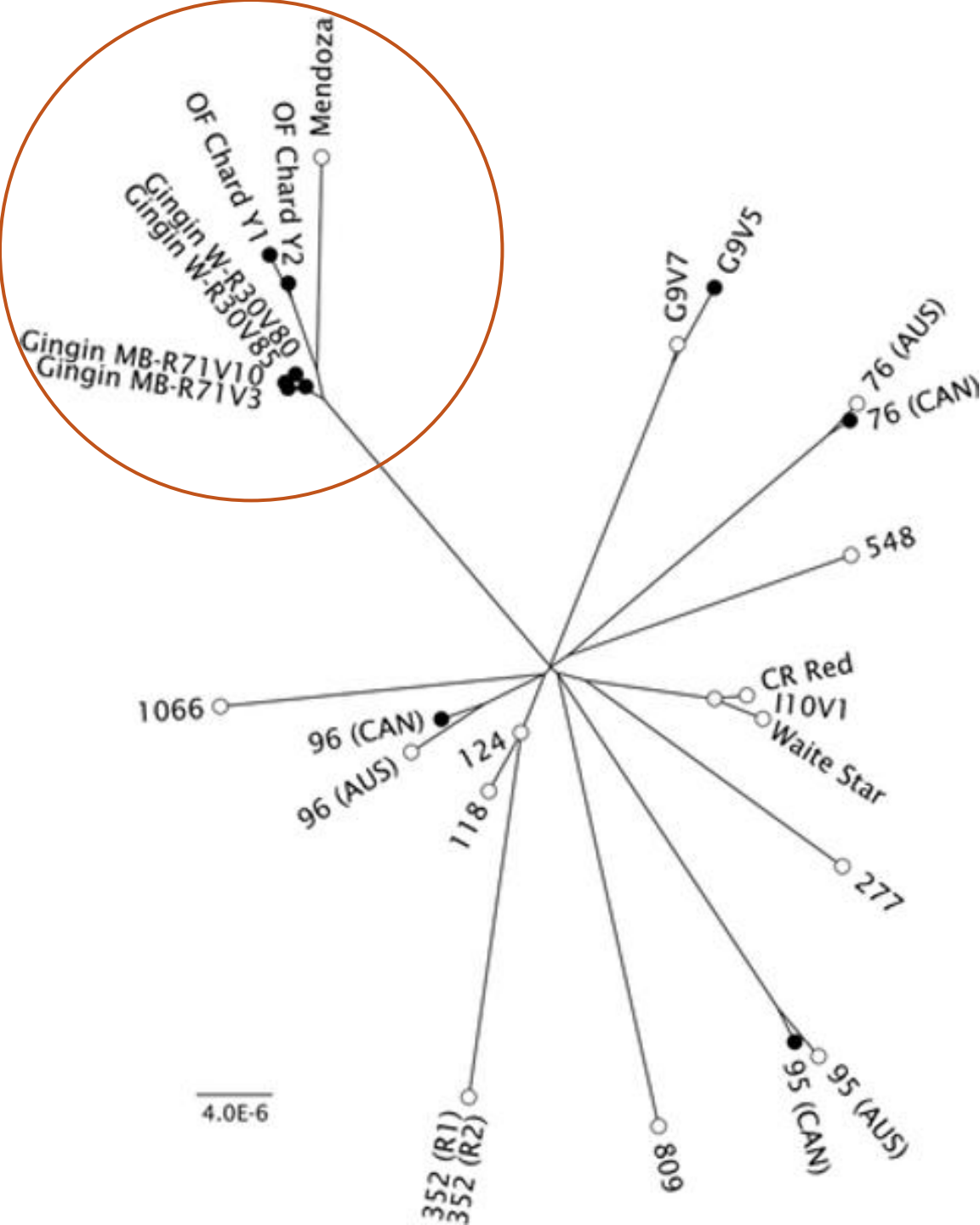


Figure 1: Whole genome sequencing of common Australian chardonnay clones. The Phylogeny of Chardonnay clones. Unrooted maximum likelihood phylogeny of all Chardonnay samples scaled by substitutions per site. (Roach et al, 2020).

The new genomics research has revealed that all three clones have a shared heritage, in an old Californian source block at UC Davis. They are, however, quite distinct from each other. In particular, Gingin and Mendoza are as different from each other as they are from any of the other clonal selections of Chardonnay, despite their shared origins. (WBM, 2020)

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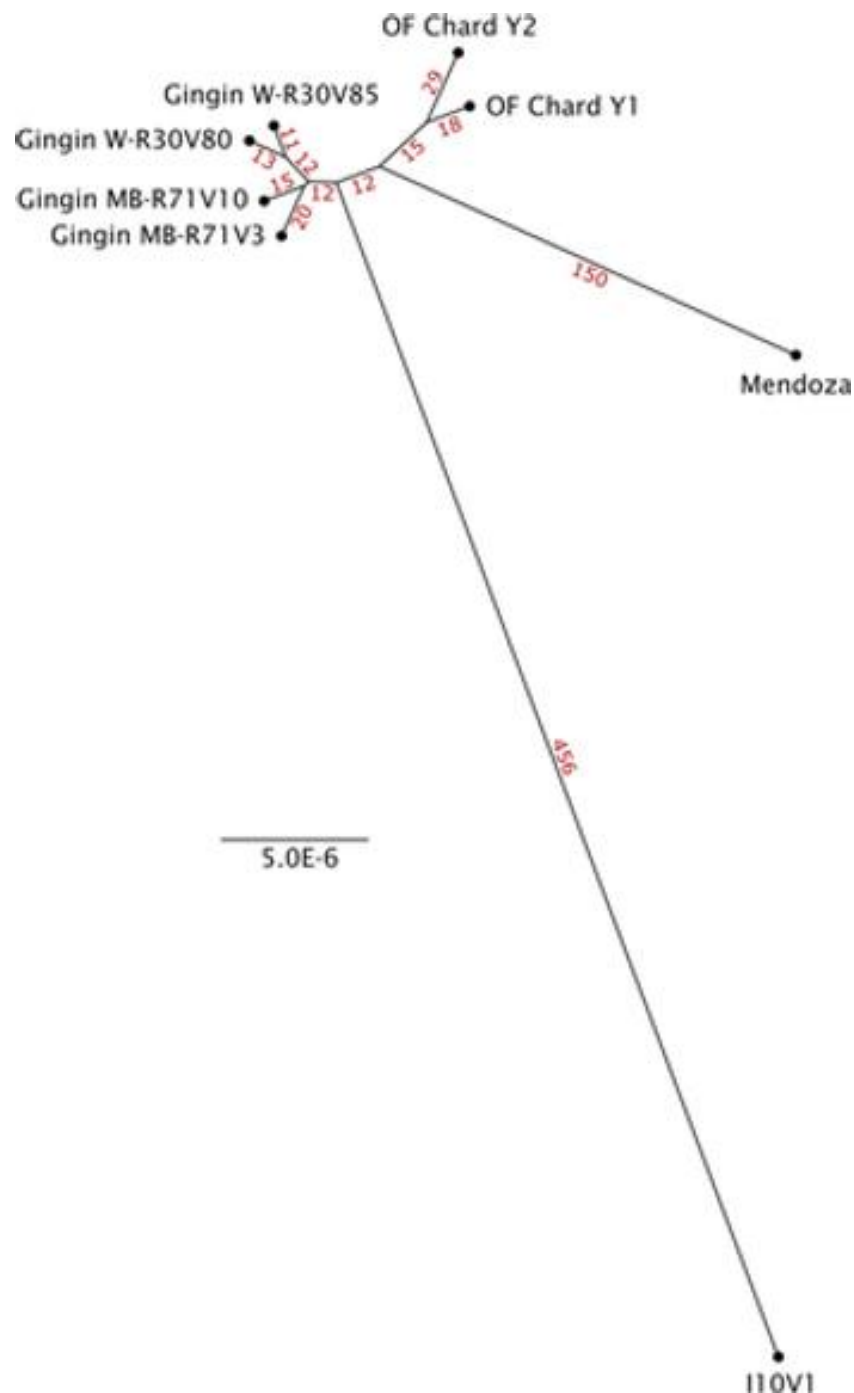
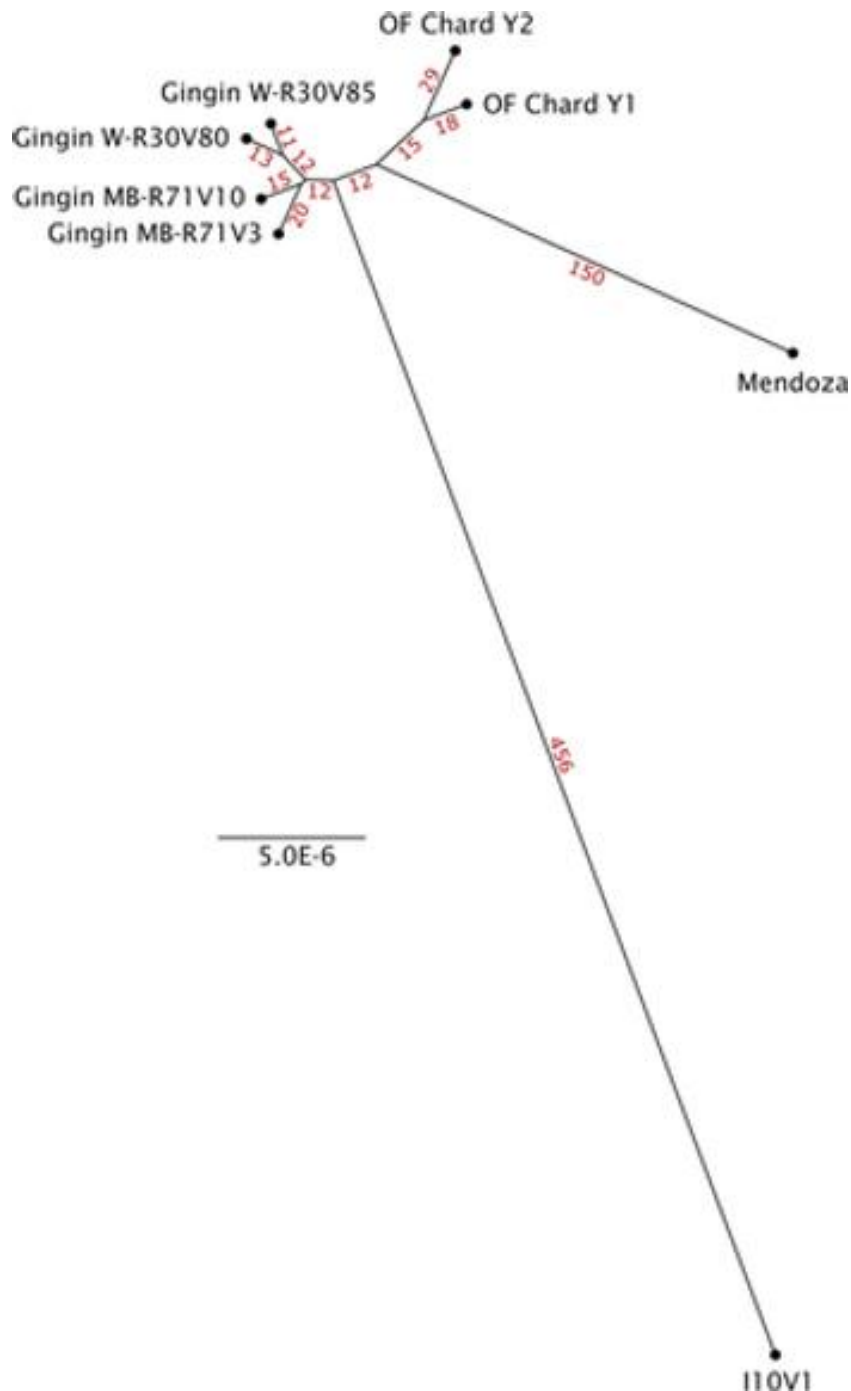


Figure 2 : Whole genome sequencing of Gingin, Mendoza and OF-Chard clones. The Phylogeny of Chardonnay clones. Unrooted maximum likelihood phylogeny of all Chardonnay samples scaled by substitutions per site. (Roach et al, 2020) . Showing that Gingin is different genetically to Mendoza and more similar to OF-Chard.

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Genetic analysis of the Australian clone Gingin, the American clone OF Chard and the Argentinian clone Mendoza suggests that all three grapevine clones share a recent common progenitor. Furthermore, the genetic relationships are consistent with Gingin being an early selection of the UC Davis clone Chardonnay-1. The phylogeny shows that Mendoza shares the same progenitor as both Gingin and OF Chard but has diverged significantly since. It's thought that all 3 clones are originally from the source block in California, with Mendoza travelling to Argentina for more than 50 years before being imported back into California and then into the east coast of Australia. With the Gingin clone sources directly from the OF chard in California. The 60-year old mystery surrounding the origins of Gingin has been solved, with its origins now tracing back almost 90 years to a foundation vineyard in California at the end of prohibition (Roach et al. 2020).



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The attributes associated with the clone – poor fruit set, millerandage, low yields and unique wine style – are widely believed to be due to an interaction with one or more grapevine viruses, suspected to be GLRV1 and GLRV3. Monica Keogh has been doing research on whether it is these viruses that give Gingin its character.

Resulting behaviour also includes retarded degradation of acid and therefore still acid at our ideal ripeness in the climate of Margaret River.

Is this the analytically perfect clone for our environment.

What's yours?

Bernard ripeness vs Gingin



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Clonal Ripening						
Average analysis of Plots of Gingin vs Bernard (95,96,76)						
Last Sample analysis before harvest - usually withing 4 days						
Vintage	Location	Clone	Baume	pH	TA	Bunch Weight
2026	Nth MR	Gingin	12	3.07	9.5	137
2026	Nth MR	Bernard	11.2	3.06	9.1	148
2026	Sth MR	Gingin	12.1	3.13	9.2	159
2026	Sth MR	Bernard	11.6	3.14	8.5	190
2026	FAR Sth MR	Gingin	12.2	3.01	9.3	123
2025	Nth MR	Gingin	12	3.1	9.4	92
2025	Nth MR	Bernard	11.3	3.12	8.5	122
2025	STH MR	Gingin	12	3.08	9.5	130
2025	FAR Sth MR	Gingin	12	3.09	9	141
2024	Nth MR	Gingin	12.5	3.13	9.3	91
2024	Nth MR	Bernard	12.1	3.18	8.6	97
2024	Sth MR	Gingin	12	3.07	9.75	113
2024	FAR Sth MR	Gingin	12	3.07	9.45	110
2023	Nth MR	Gingin	11.8	3.06	9.8	89
2023	Nth MR	Bernard	11.3	3.14	9.1	110
2023	Sth MR	Gingin	11.9	3.06	9.4	127
2023	FAR Sth MR	Gingin	11.6	3	9.5	141

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- We think we've been lucky with Gingin Chardonnay in our environment with the pH and Acid balanced with alcohol potential and flavour but pending site this can all go wrong with how you handle it.
- Look at weight and balance of fruit and balance the controllable influences
- For Example, Hand pick vs Machine Harvest comparison/impacts



Machine Harvest Trial

We did a trial this year to identify when the pH blows out when you Machine Harvest.

AIM:		To determine if faster processing time from harvest minimises pH increase to end juice.							
Method		From Whole Bunch Vineyard sample to end Free run of 2 press loads in Tank.							
Sample 1		Collect a 20 bunch sample night of harvest							
Sample 2		Collect a juice sample off skins from the first bin off harvester (mix and ensure no PMS water contamination)							
Sample 3		Collect a juice sample off skins from the same bin off harvester immediately before the first truck departs							
Sample 4		Collect juice sample from the press							
Sample 5		Collect Juice sample analysis from in tank free run.							
		Genuine free run only, no pressing. Just filling the press and change tank to alternative Pressings tank before starting the press.							
ADF2CHA		Harvest Start time 10pm. Harvester breakdown ~12-2pm. Harvest complete 8am.							
Sample 1		Sample 2		Sample 3		Sample 4		Sample 5	
Date	10.02.26		10.02.26		11.02.26		11.02.26		11.02.26
Whole Bunch		Bin No	127	Bin No	127	Press tray		Free Run Tank	B-05
20 bunch sample : 3100g (155g/bunch)		Temp °C	15.9		15.8		13.8		14.1
		Time	11.50pm		05.30am		07.00am		12.50pm
Baume	11.9		11.9		11.9		12		12
pH	3.14		3.28		3.28		3.3		3.39
TA	7.2		7.5		7.5		6.7		6.3
								Extraction	600L/T (Out of 770L/T)



IMPORTANT INFLUENCES FOR CHARACTER



Examples of NTU with different clones

- Gingin Thick skin - 400-700 NTU
- Bernard Thin Skin - Bernard 1000+NTU
(need to machine harvest to get this)
- Wild yeast vs packet



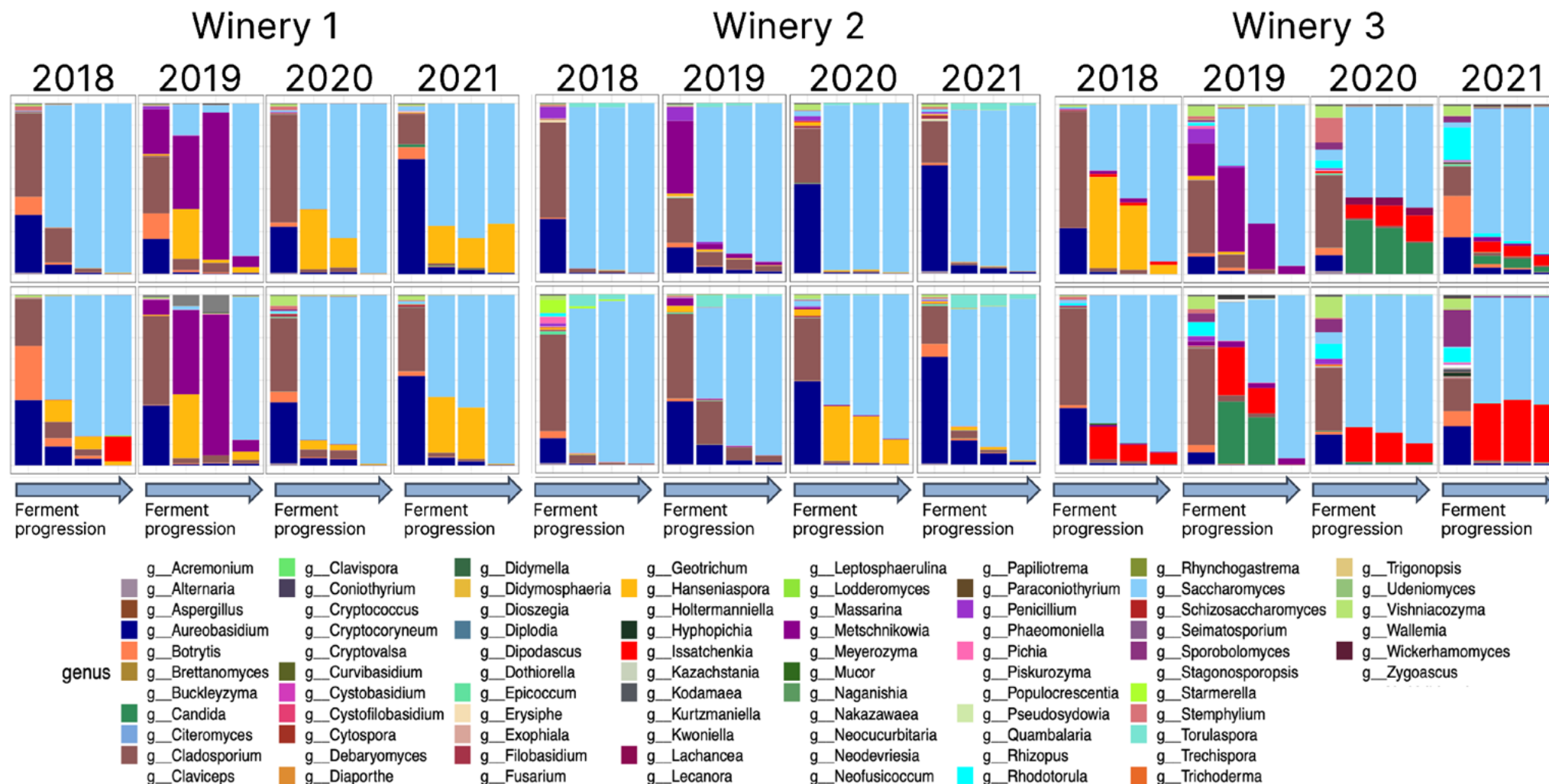
Solids

Bringing science to wild wine:
Wine yeast microflora and wild fermentation

Presented by Anthony Borneman
Sep 2026



Margaret River Chardonnay



Acknowledgements

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- All the collaborators supplying wild ferment samples

- AWRI
- Cristobal Onetto
- Steven Van Den Heuvel
- Kate Cuijvers
- Laura Hale

AWRI**Wine
Australia****BIOPLATFORMS
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MORE IMPORTANT WINEMAKING INFLUENCES

Wild Yeast

- Gods gift to humanity
- Fungi variability in different areas.
- Prefer small parties

Oxygen in juice

- Hand Pick Whole bunch press, small batches have naturally higher oxygen
- Machine Harvest whole juice and skins = less oxygen exposure so with high solids, larger batch = more reductive, dirty
- Consider rumbling with filtered air before barrelling down



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MORE IMPORTANT WINEMAKING INFLUENCES

Packet Yeast

- Consider yeast numbers – more yeast requires more nutrient and more oxygen

Nutrient impact

- Just because you're low YAN doesn't mean go crazy with nutrient.
- Minimum 150 YAN considered fine, but lower can work better for personality. Wild yeast love higher NTU always useful.
- Reductive characters reduced and tutti fruity ferments result with highly nutritious juice.
- Just make sure you finish your ferment, overseed if required but don't compromise good complexity at the start.





- Handling - Stirring/racking
- When to sulphur
- New oak Influence
- Old oak influence,
- Size of oak,
- time in size of oak
- Ceramic, glass, Stainless Steel, shape, Lees impact/surface texture.



Finishing the Wine



- Emptying to tank/bottle - with or without solids, for how long?
- Stabilisation? Why?
- What's your crystal and NTU tolerance in glass?
- Where is the wine going?
- Filtration? Why?



CHARDONNAY



Which clone now works where you live and breathe Chardonnay.

Do you know its history/heritage what that clone looks like in other climates?

Represented today	Other great Margaret River Chardonnays				
Vasse Felix	Leeuwin	Domain Naturalist	Mosswood	Juniper	Evans and Tate
Deep Woods	Voyager	Cullen	Flametree	Trait	Forester
McHenry Hohnen	Xanadu	Pierro	La Kooki	Dukes	Frazer Gallop
Stella Bella	House of Cards	Cloudburst	Nocturn	LS Merchant	Devils Lair
	Windows	Gralyn	Dormilona	Battles	Cheubino
	Fermoy	ChaCha			

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With thanks to...



- Huge thank you to McHenry Hohnen for donating their wine
- Thank you to Stella Bella and Deep Woods for making available at a great price.
- Thank you so much for inviting me
- But mostly thank you to all the organisers, pourers, sponsors.

