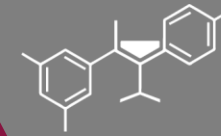


September 2024

Aotearoa Chardonnay Symposium



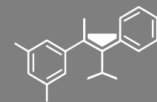
BRAGATO
RESEARCH INSTITUTE
RANGAHAU KAREPE, WĀINA O AOTEAROA

Clones and their impact on Chardonnay

Braden Crosby - Knowledge Transfer and Engagement Lead

Bragato Research Institute – Rangahau Karepe, Wāina o Aotearoa

World-leading research from grape to glass



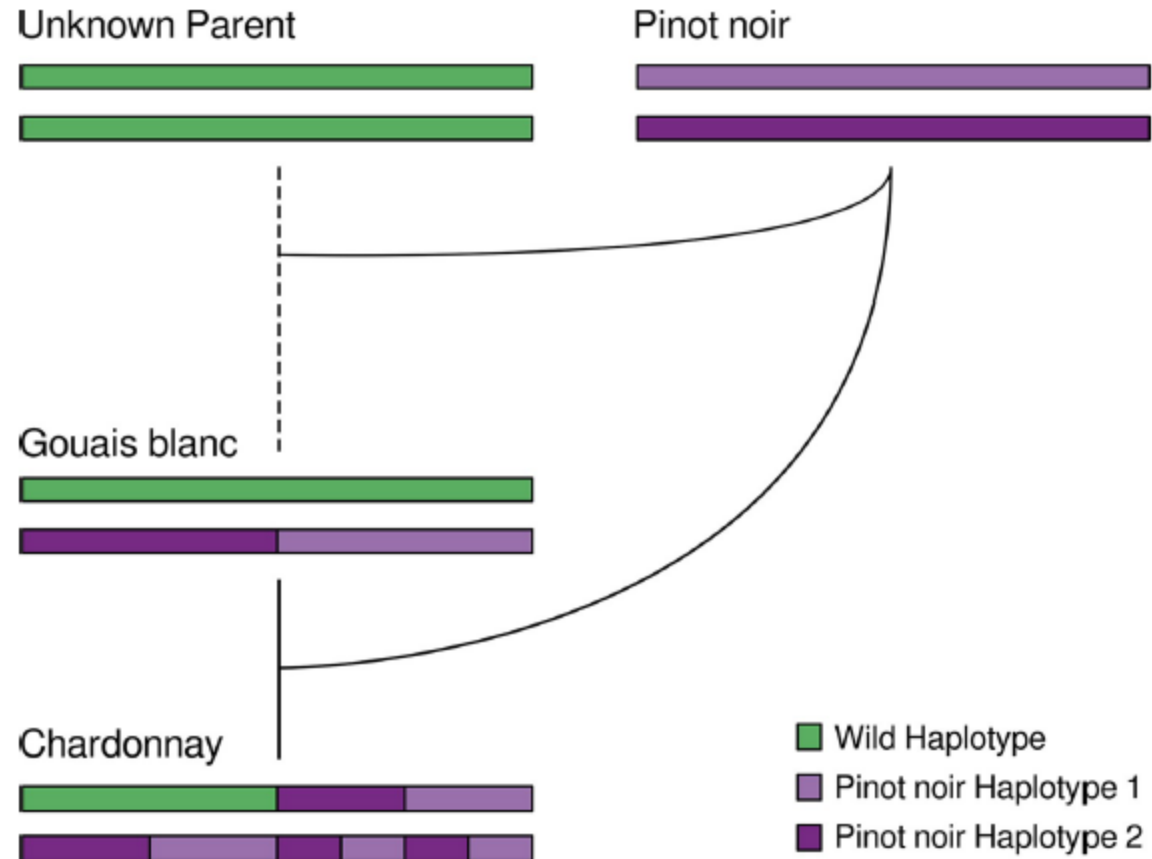
Background

- Investigate the current trends in chardonnay plantings in Aotearoa
- Review current clonal selections
- Explore regional differences at a wine chemistry level
- Understand the quality/quantity trade-off for winemakers
- Pose the question, are clones we rely on now fit for purpose going forward?



Chardonnay Clone 548

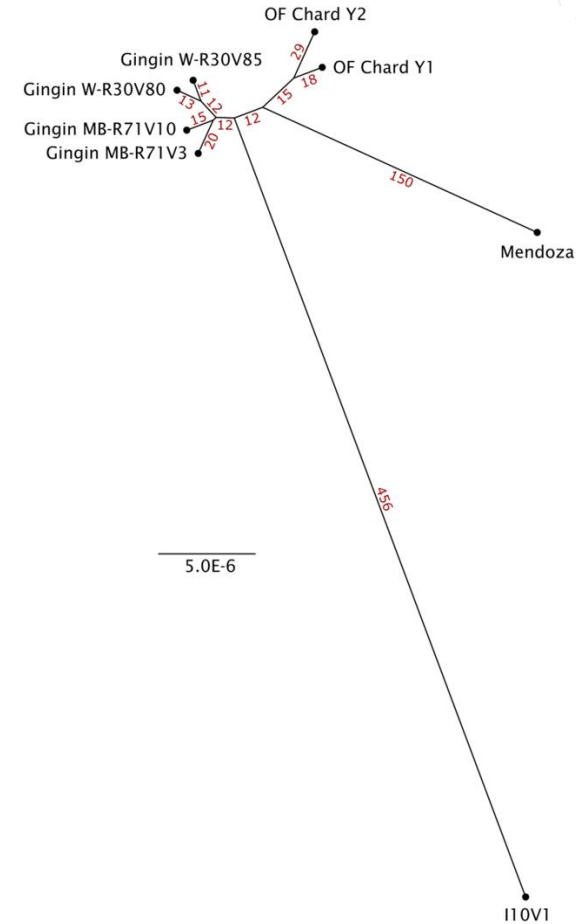
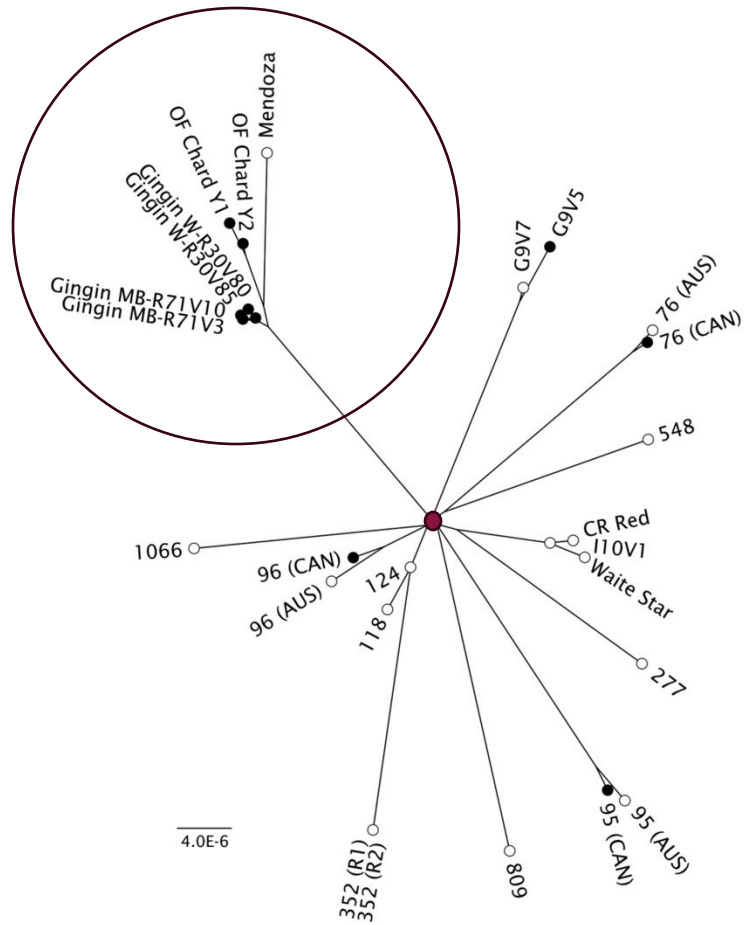
Ancestral vine



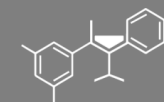
Roach, M.J., Johnson, D.L., Bohlmann, van Vuuren, H.J.J., Jones, S.J.M, Pretorius, I.S., Schmidt, S.A., Borneman, A.J., (2018)

Phylogeny

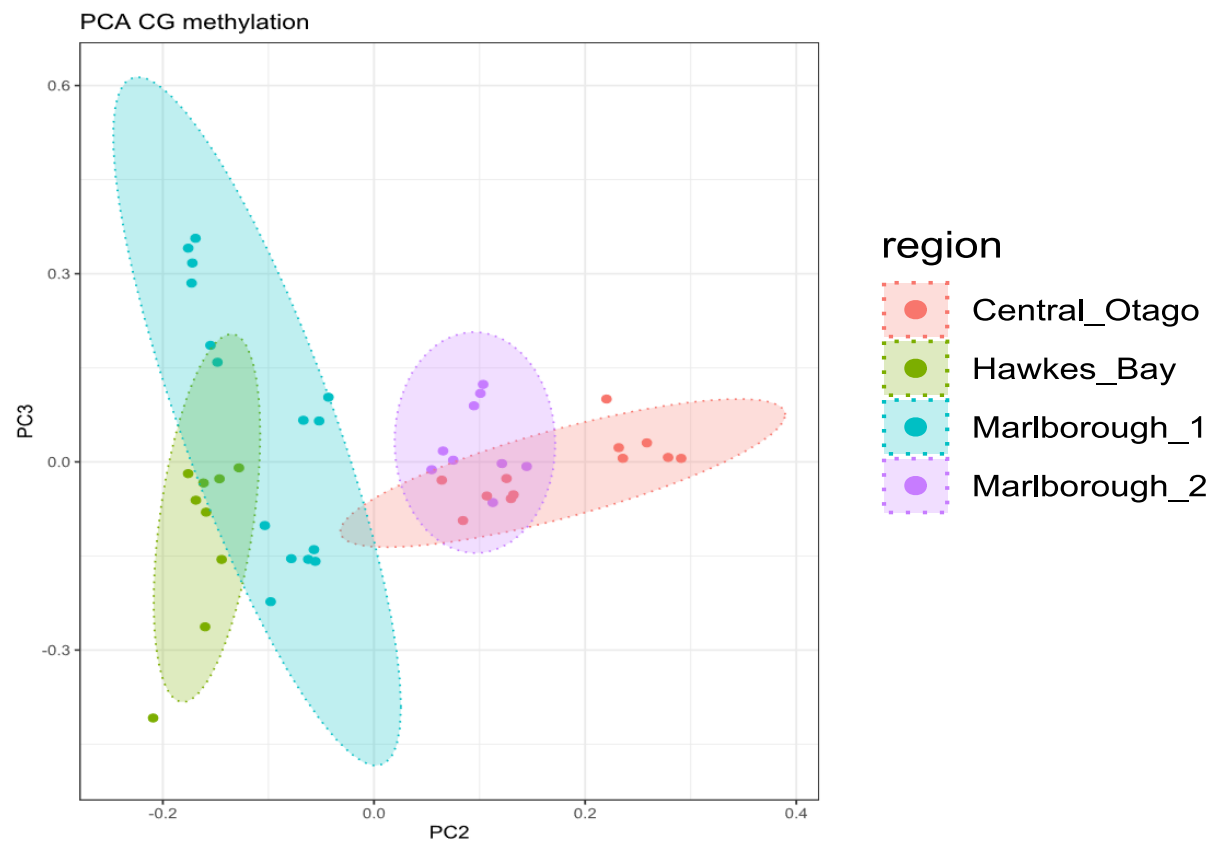
Ancestral Vine



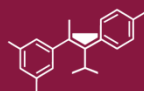
Reference: Roach, M. J., Bormeman, A.R., & Schmidt, S.A., (2020)

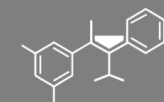


Plant response to environment



Reference, Bragato Research Institute





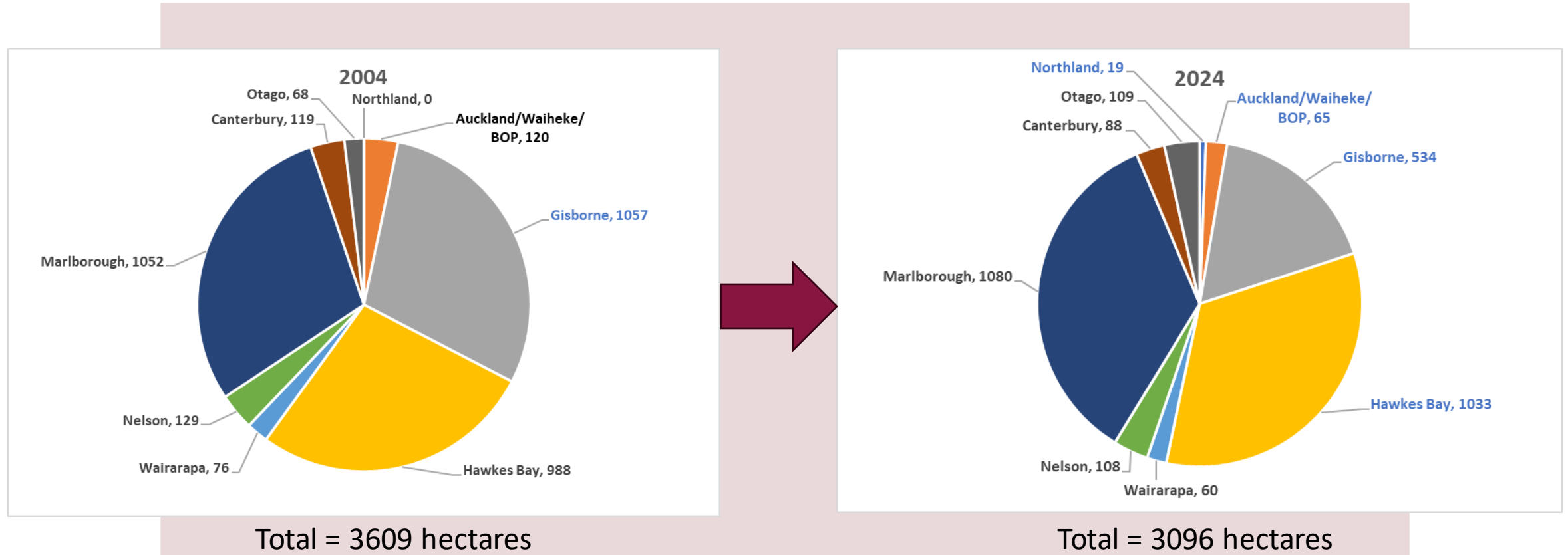
Intentional selection and grapevine improvement

- The ancestral vine was either bred or selected on purpose and likely came from a single seed
- Nature and nurture – clonal selection requires natural mutations and intentional or unintentional selection. The clones today have been refined through centuries but are based on a historical context
- To make a new cell, all the DNA needs to be copied, with a billion new cells required per kilogram of plant
- Random changes (mutations) occur spontaneously, and old vines eventually have more, but are often only detected when they affect visual traits
- Clones that we have today are connected, but also distinct and were most likely selected in isolation
- Current GVI tools aim to speed the process of genetic mutation and the screening selection process. Plant selection can now be more targeted

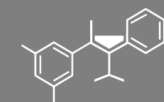


Chardonnay – the regions

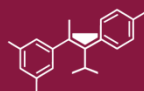
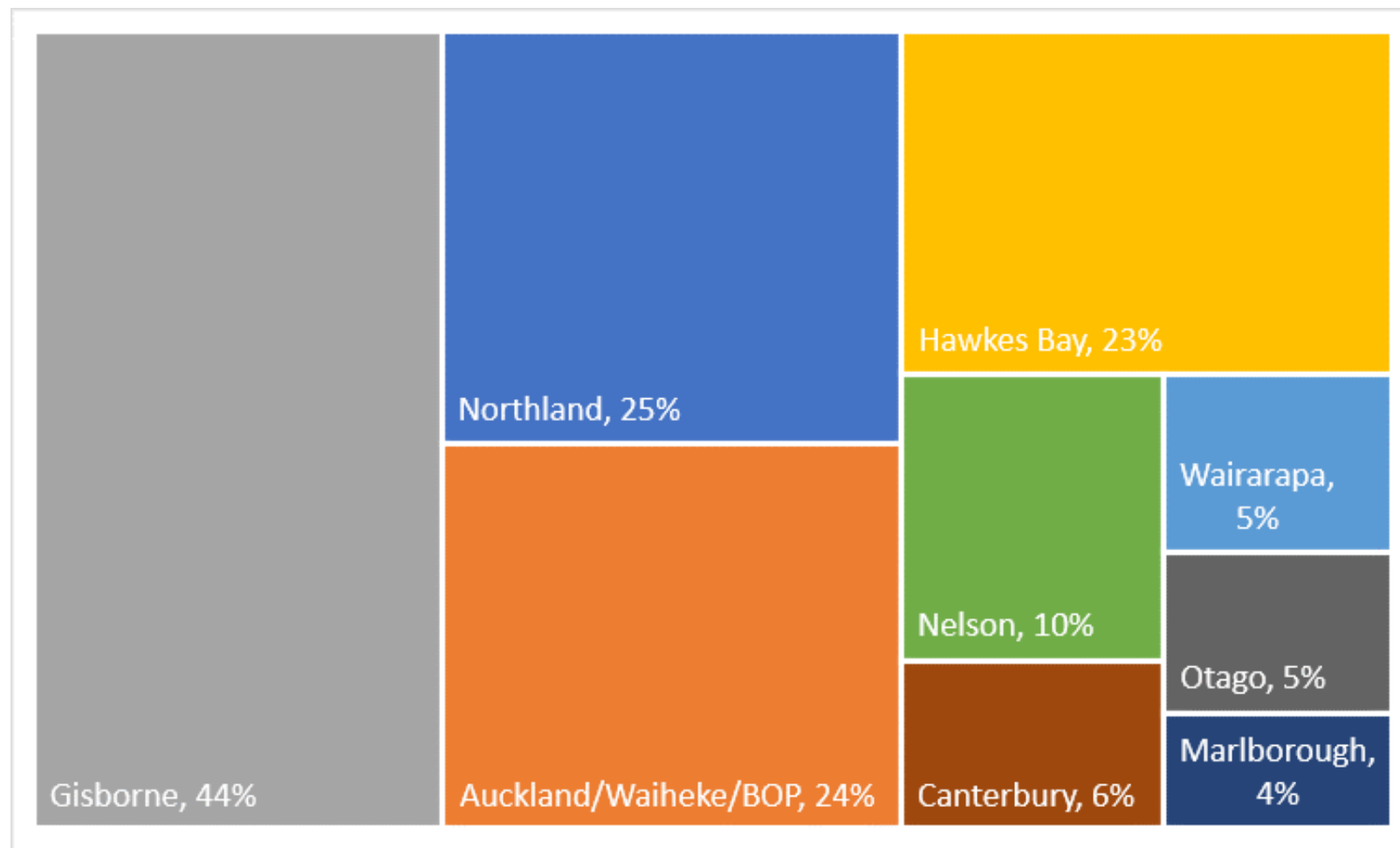
20-year trend

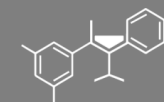


Reference, NZ Winegrowers Annual Vineyard Report



Importance of chardonnay to each region





Clonal importation

UCD (FPS)

UCD 4

UCD 5

UCD 6

UCD 7

UCD 15

UCD 16

Older Selections

Mendoza

MVIG1

BDX8021

Rua 1

2/23

Other Selections

Solinus 151

Solinus 156

McWilliams 33

McWilliams 54

SMA 123

Dijon

B 95

B 96

121

131

548 (ENTAV-INRA)

121 (ENTAV-INRA)

809 (ENTAV-INRA)

1066 (ENTAV-INRA)

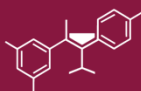
New Clones

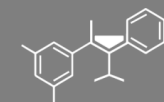
Monte

107

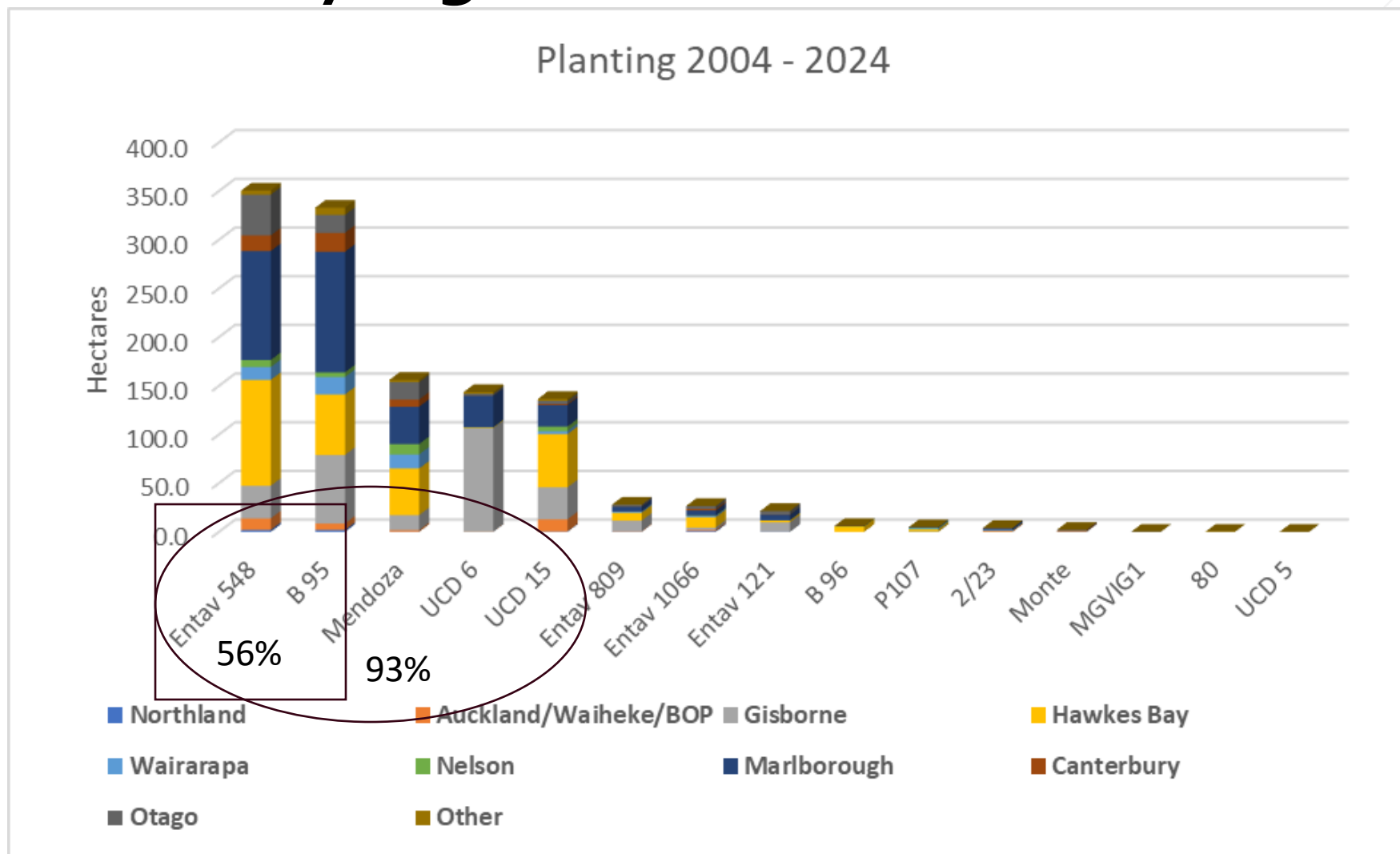
R80

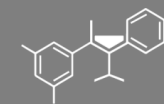
Reference N. Hoskins and National Vine Collection





Clonal trends by region





The big questions



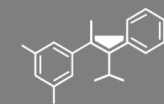
Are we simplifying our clonal selection to much?

What is the opportunity cost of this simplification?

Are we aware of our clonal bias?

Should we be looking closer to home for our selections?

Where will GVI head in the future, and what do we want and how can we be part of the conversation?



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