



Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

SAGWRI

South African
Grape and Wine
Research Institute

Assessing Yeast Nutrition Strategies to Enhance the Premiumisation of South African Chenin blanc Wines

A. Ntoyakhe, B. Divol & M. du Toit
SASEV 44th Conference: 26/11/2025

Markets and Product Intelligence Work stream

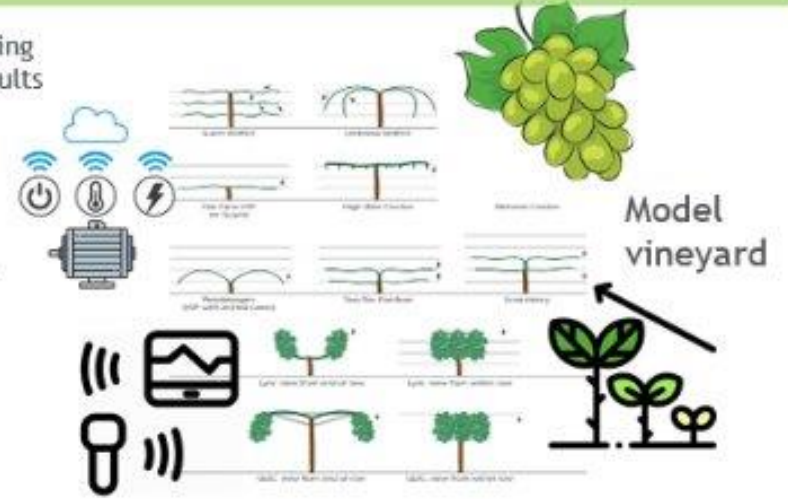


General support Work stream



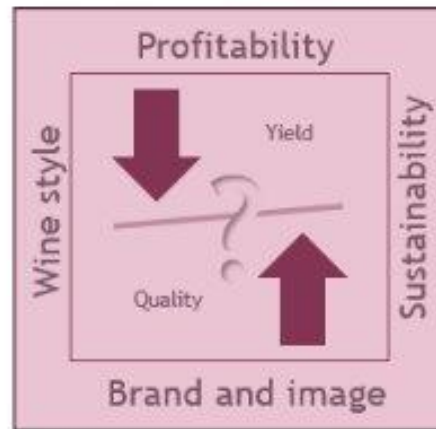
Student training
Showcase results

Production for Quality and Profit Work stream



Focus on commercial wines:
define chemical/sensory drivers and identify distinctive features that define premium, value and bulk CB wines

Chenin blanc (CB)

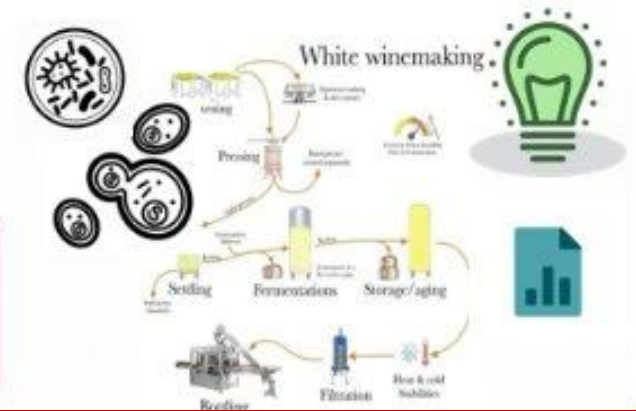


Focus on experimental wines,
using grapes from model vineyard

The distinctive SA Chenin Blanc Work Stream

Distinctive impact compounds (aroma network analyses) and taste and mouthfeel attributes to inform premiumization

Juice to Wine Work Stream



Premiumisation and Value Growth of South African Chenin blanc wines

Can targeted yeast nutrition enhance the premiumisation potential of Chenin Blanc across different trellis systems and yeast strains?



Yeast and Nutrient Selection



Anchor VIN 13

Low nitrogen requirement

Promotes strong thiol and ester production, enhancing tropical and citrus aromas



Anchor Exotics Novello

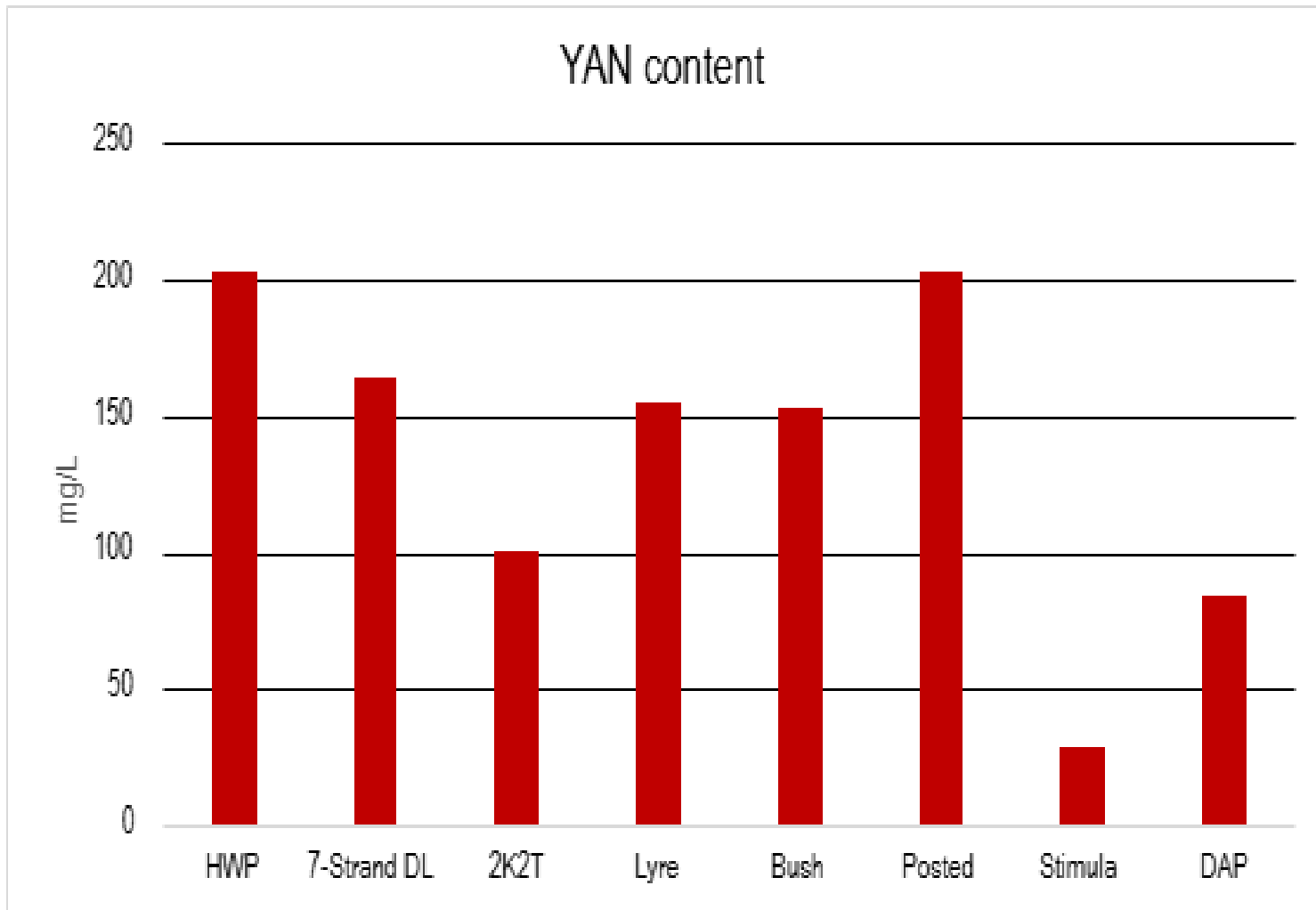
Moderate nitrogen requirement

Promotes intense fruity, tropical, and floral esters; Enhances mouthfeel



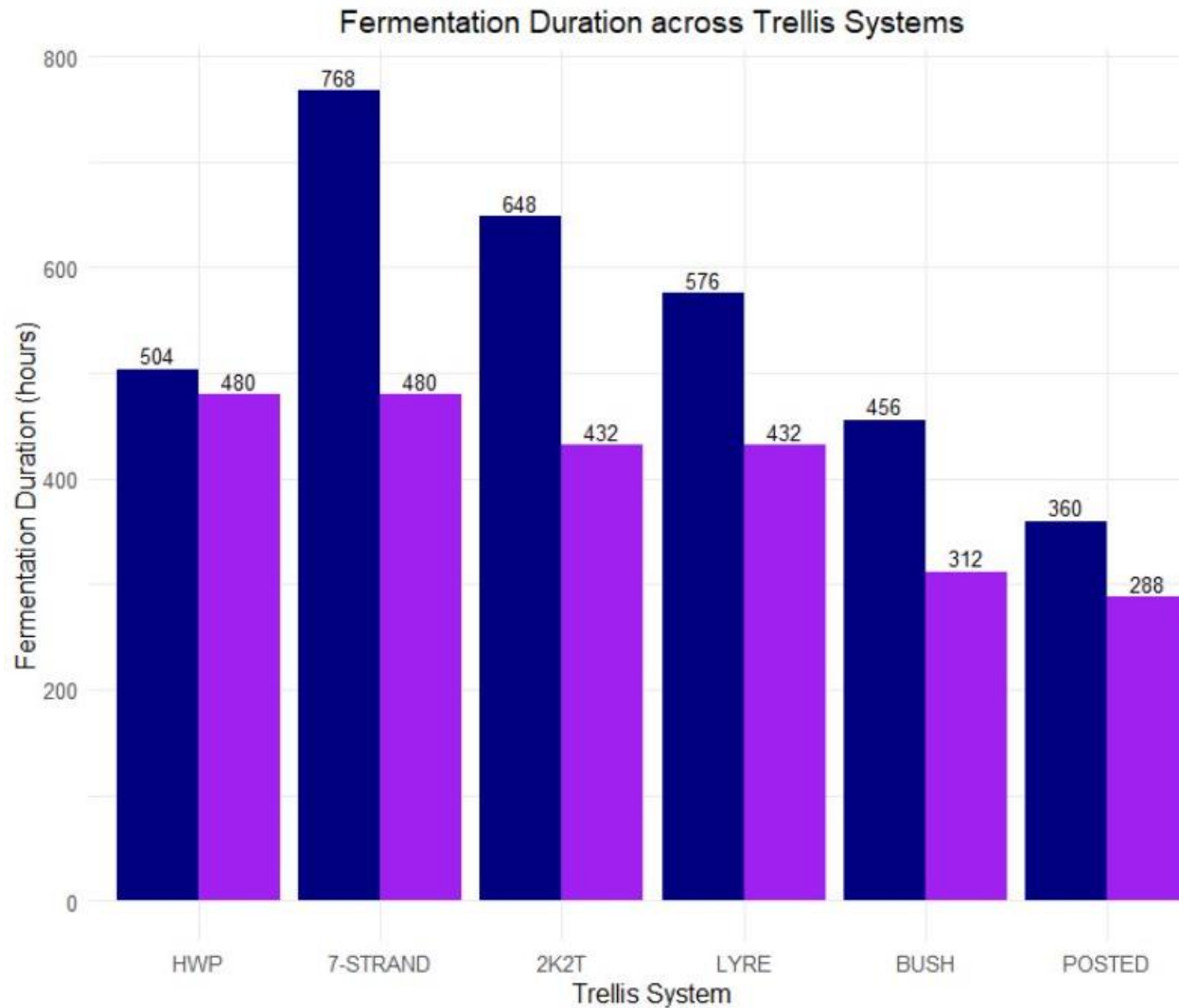
Lallemand Stimula Chenin blanc

Organic nitrogen and micronutrient source



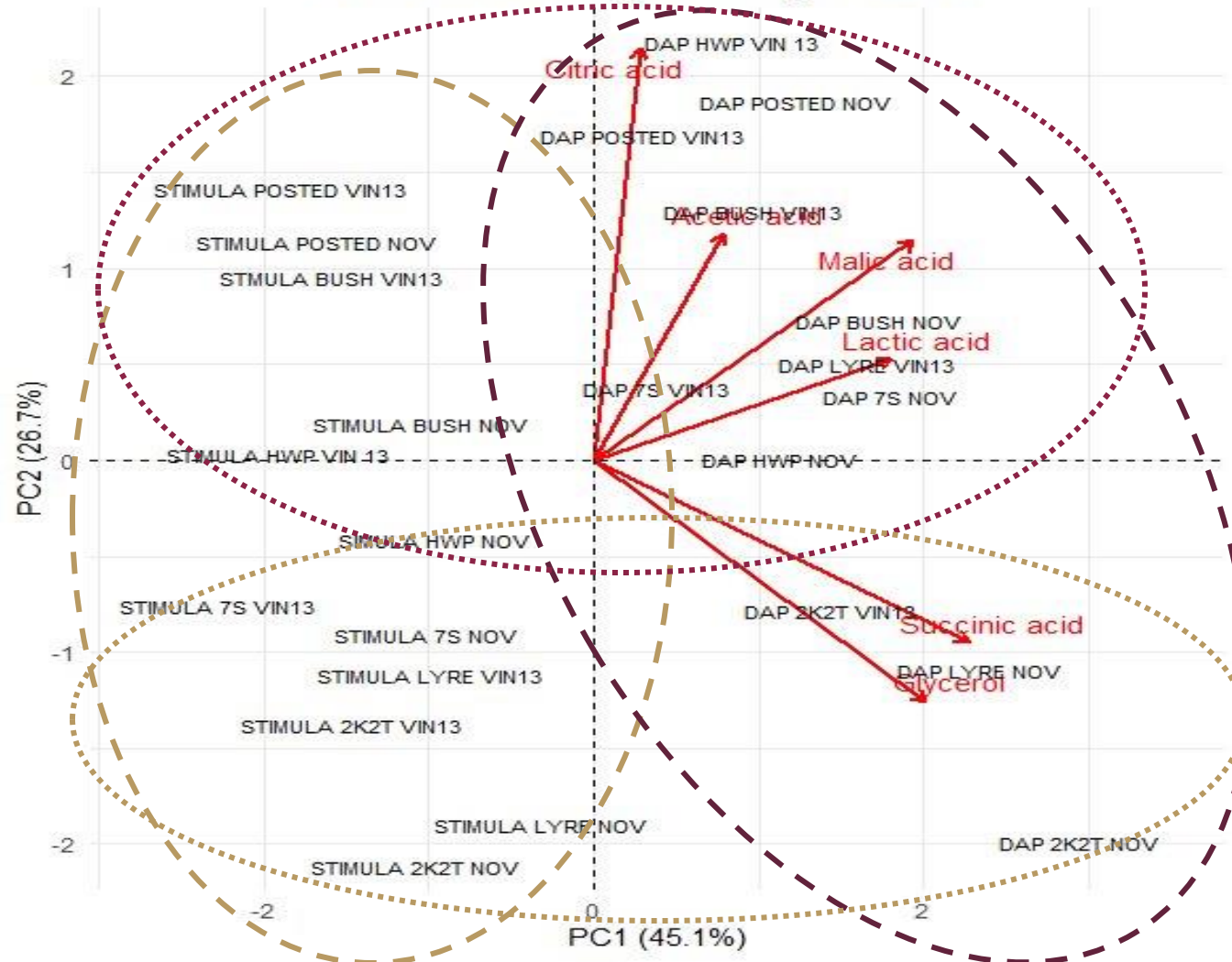
- HWP and Posted show the highest YAN
- 2K2T is noticeably lower
- Stimula and DAP supply very different amounts of YAN, even at the same dosage
- Equal nutrient addition does not result in equal nitrogen availability
- Influences how each yeast strain performs during fermentation

Dosage of Stimula and DAP at 40 g/hL



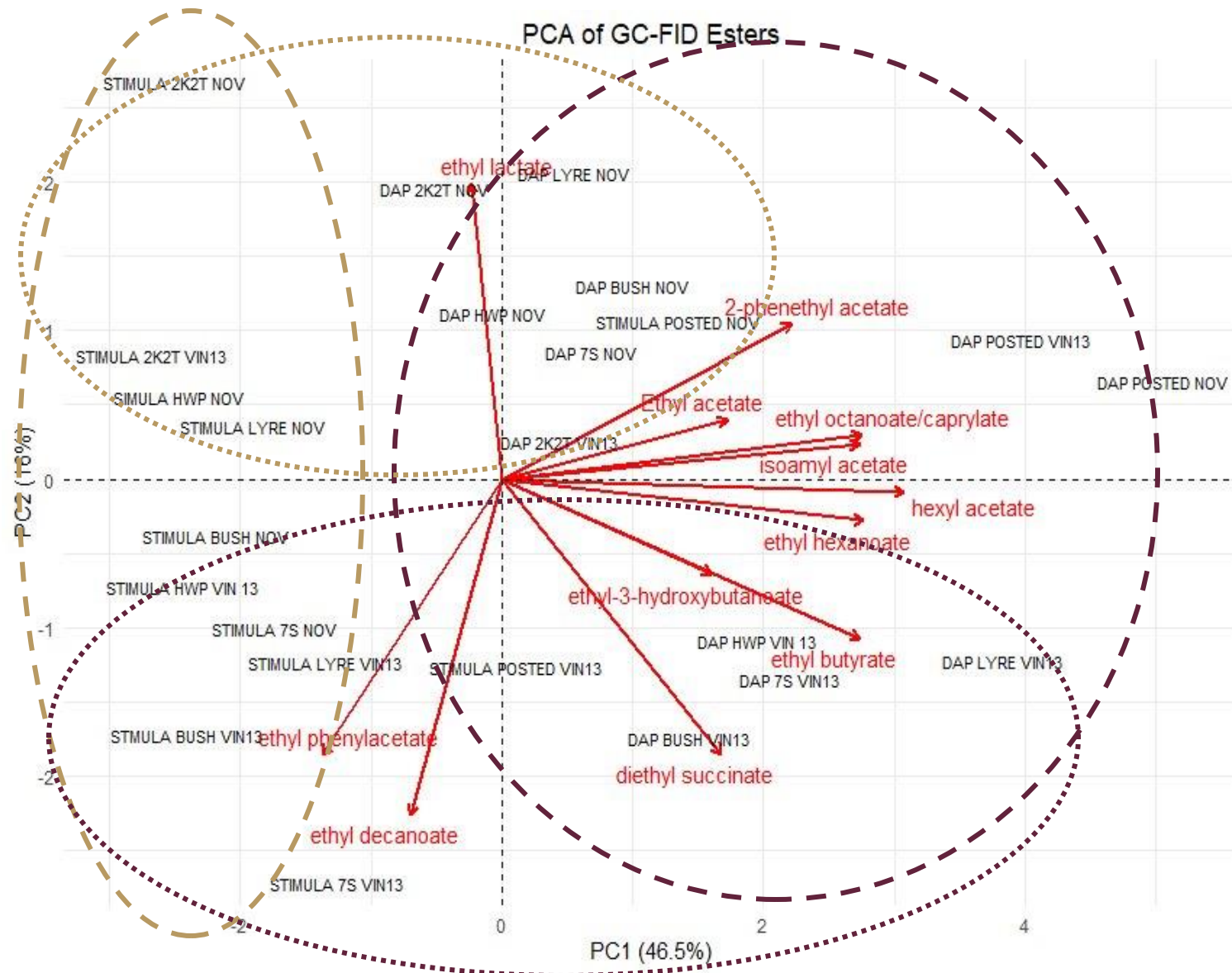
- Novello slower than VIN13 across all trellis systems.
- Biggest strain differences in the 7-Strand and 2K2T systems
- VIN13 faster, consistent fermentation, especially in Posted and Bush systems.
- Likely linked to strain specific nitrogen requirements

PCA of HPLC Sugars & Organic Acids



- DAP linked to higher succinic acid, glycerol, and lactic acid.
- Stimula wines cluster with generally lower metabolite levels.
- VIN13 shows wider spread, Novello closer together.
- HWP + Bush + Posted → higher citric + malic acid
- 7-Strand + Lyre + 2K2T → higher glycerol and succinic acid
- Overall impact order: Nutrient > Yeast > Trellis

- DAP wines: higher isoamyl acetate, ethyl hexanoate, ethyl octanoate
- Stimula wines: lower overall ester production, association with ethyl lactate, phenylacetate, decanoate
- VIN13: broader ester profile.
- Novello: more constrained ester formation.
- HWP + Lyre + Posted: higher aromatic intensity.
- 7-Strand + 2K2T + Bush: more subtle ester expression.
- All these linked to difference in amino acid composition and nitrogen supplementation



Preliminary sensory notes

	High Wire Perold	7-Strand DL	2K2T	Lyre	Bush	Posted
VIN 13 Stimula	Lemon, earthy, gooseberry	Yellow apple, pear quince	Tropical, dusty, yeasty, herbaceous	Yellow apple, guava, cooked veg	Butterscotch, pineapple, pear, cream	Pineapple, white peach, guava, gooseberry
Novello Stimula	Mineral, vanilla, floral, passion fruit	Guava, green apple, litchi, cut grass	Smoky, burnt grass, peach, pear	Saline, herbs, citrus peel	Apricot, tropical, floral, passion fruit	Guava, elderflower, perfume, candy

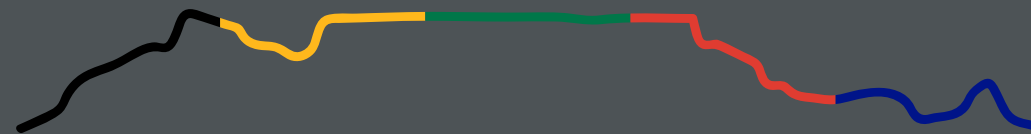
- Interaction between trellis type and fermentation treatment that shapes aroma in distinct ways
- Choice of style informs combinations

Take home message

- Even with the same nutrient dose, actual nitrogen availability can differ. Amount matters just as much as the choice of nutrient.
- Targeted nutrients at the right amounts may help support fruit-forward, premium Chenin profiles.
- Combining nutrient type, yeast strain, and trellis understanding can help nudge wine style toward premium expression
- More detailed strategy, chemistry and sensory experimentation will refine these insights.

Acknowledgements

- Prof Maret du Toit
- Prof Benoit Divol
- SAGWRI
- GLAP (Gustav Smook, Liam Samuels, Pamela Van Zijl)
- Winesteins



SOUTH AFRICA WINE

discover diversity in a glass

Thank you
Enkosi
Dankie

LinkedIn: Amazizi Ntoyakhe
Email: ntoyakheandiswa@gmail.com