

**APPLICATION OF YEAST CELL
WALL CHITIN TO COMBAT
PROTEIN HAZE IN WHITE
WINE**

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High-Chitin Live Strains vs High-Chitin Yeast Hulls

Limitations of Using Live High-Chitin Strains

Reduced fermentation performance

→ This eliminates the intended benefit of enhanced chitinase removal.

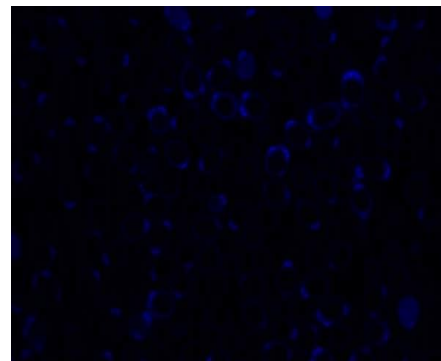
Chitin levels may fluctuate during fermentation

→ These adaptations make the fining effect inconsistent

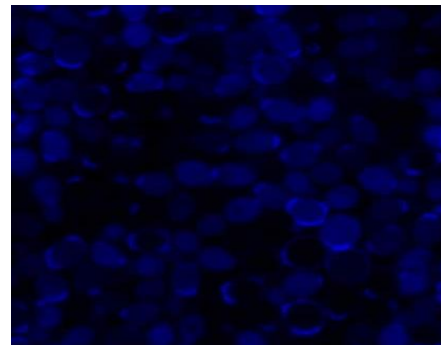
The Solution: Turn Them Into Hulls

→ This ensures consistent chitin levels and a reliable chitinase-binding effect throughout fermentation.

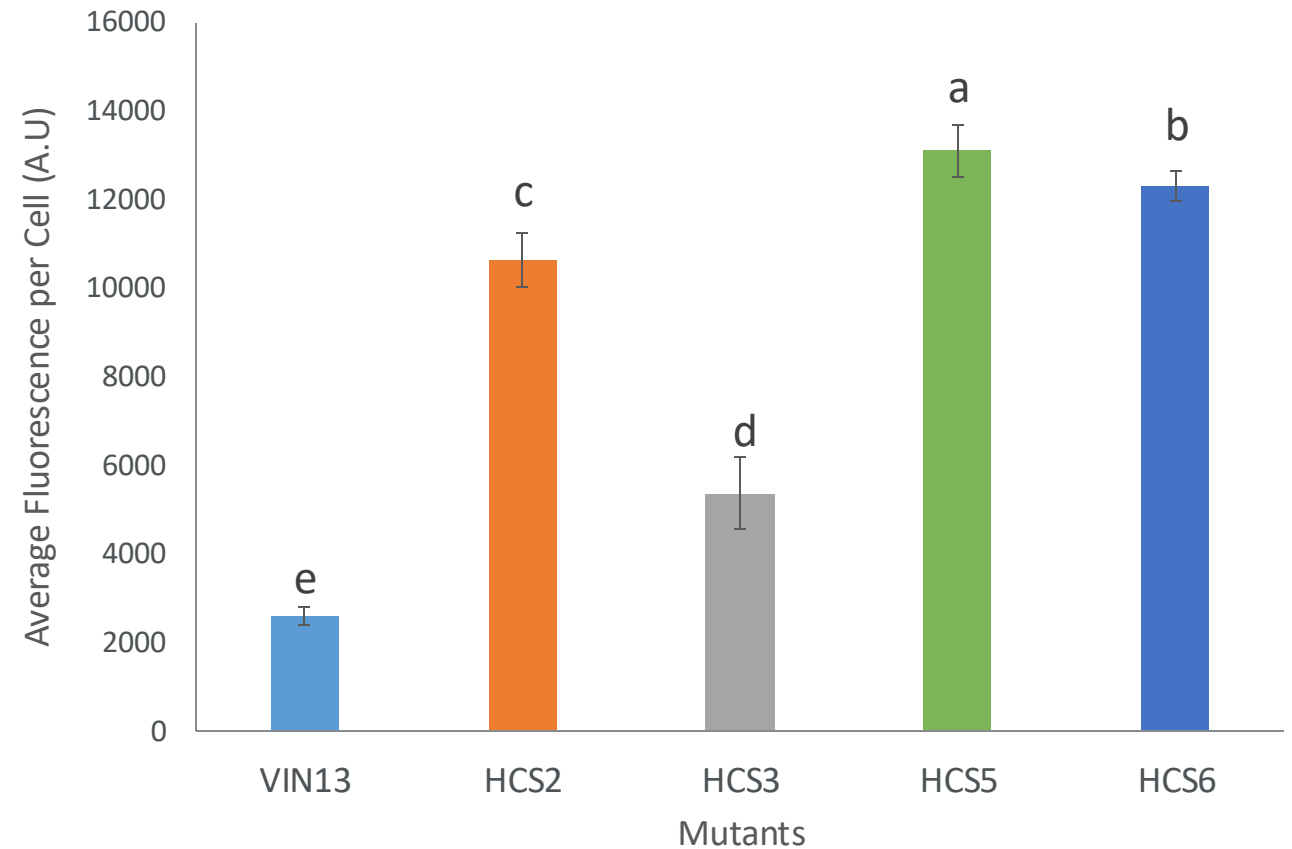
Key Findings: All high-chitin mutants have increased chitin levels the VIN13 wild-type



S. Cerevisiae wild-type



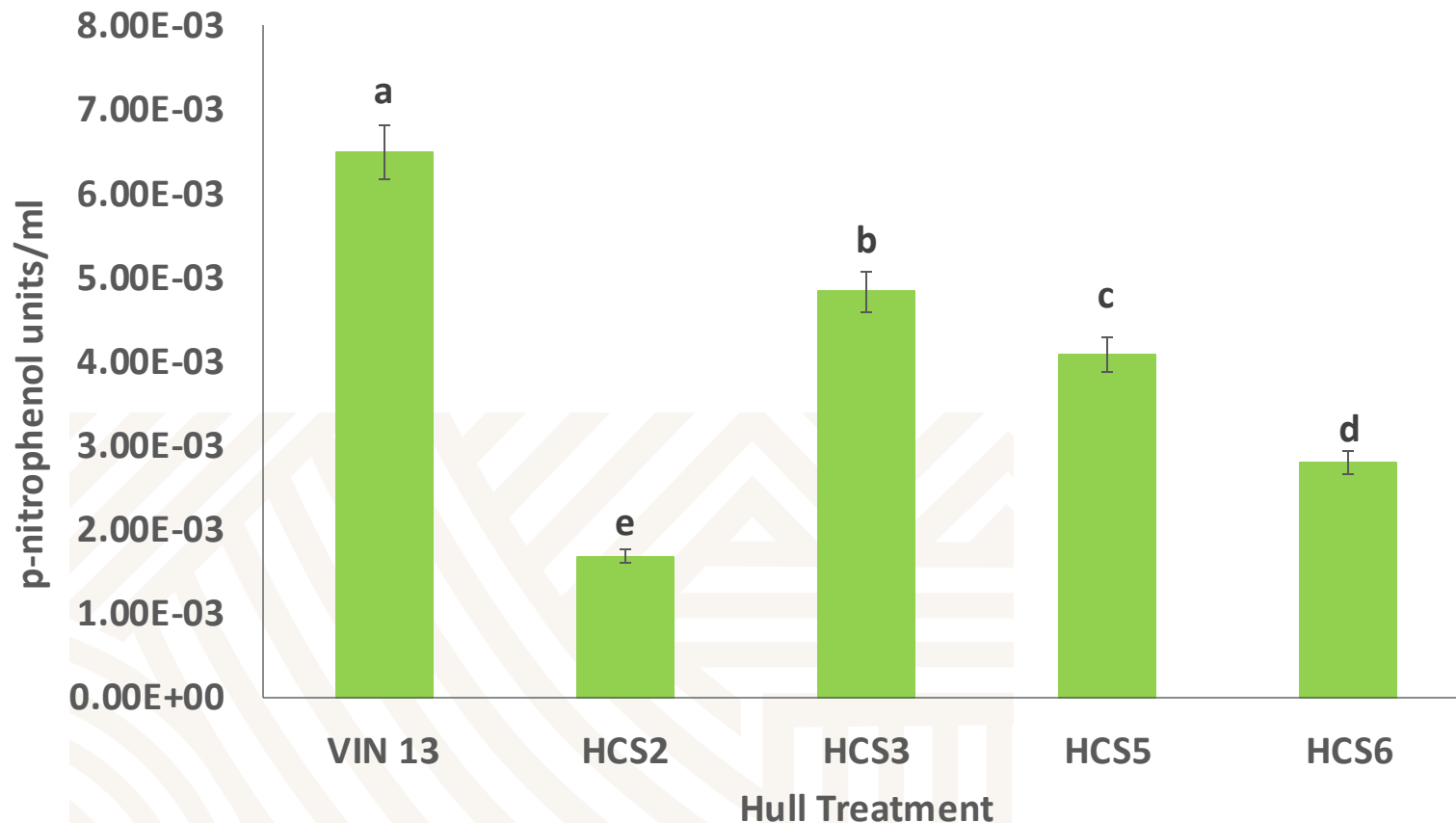
S. Cerevisiae high-chitin strain



Chuene *et al.*, 2024

Key Findings: High-chitin hulls bind more chitinases and reduce the haze potential of wine

Chitinase Activity



Sauvignon Blanc wines were treated at 2×30 g/hL with yeast hulls during fermentation.

No bentonite was added.

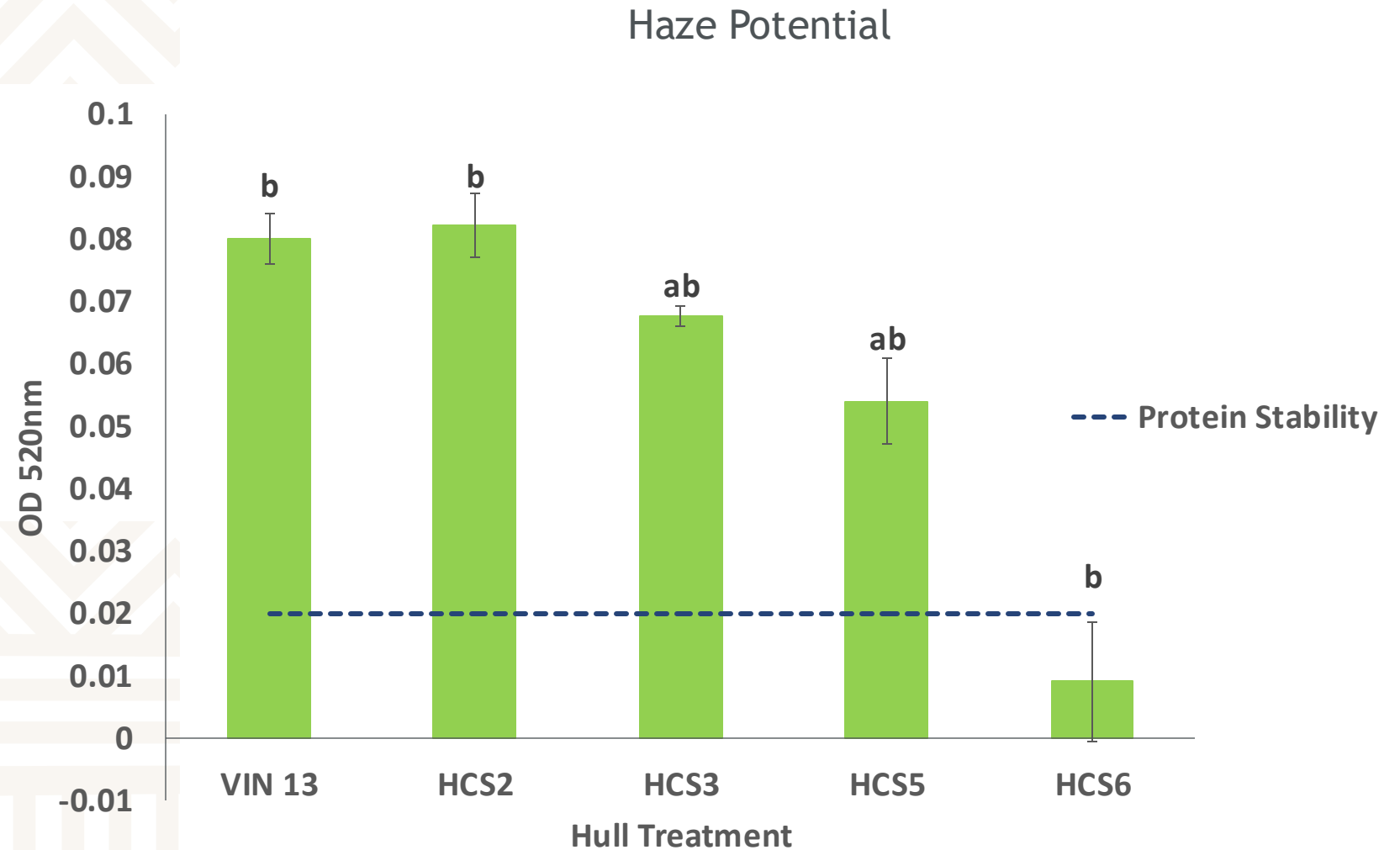
Hypothesis: Higher chitin content leads to greater chitinase removal.

High-chitin hull treatments removed more chitinases than the VIN13 hulls in wine.

Key Findings: High-chitin hulls bind more chitinases and reduce the haze potential of wine

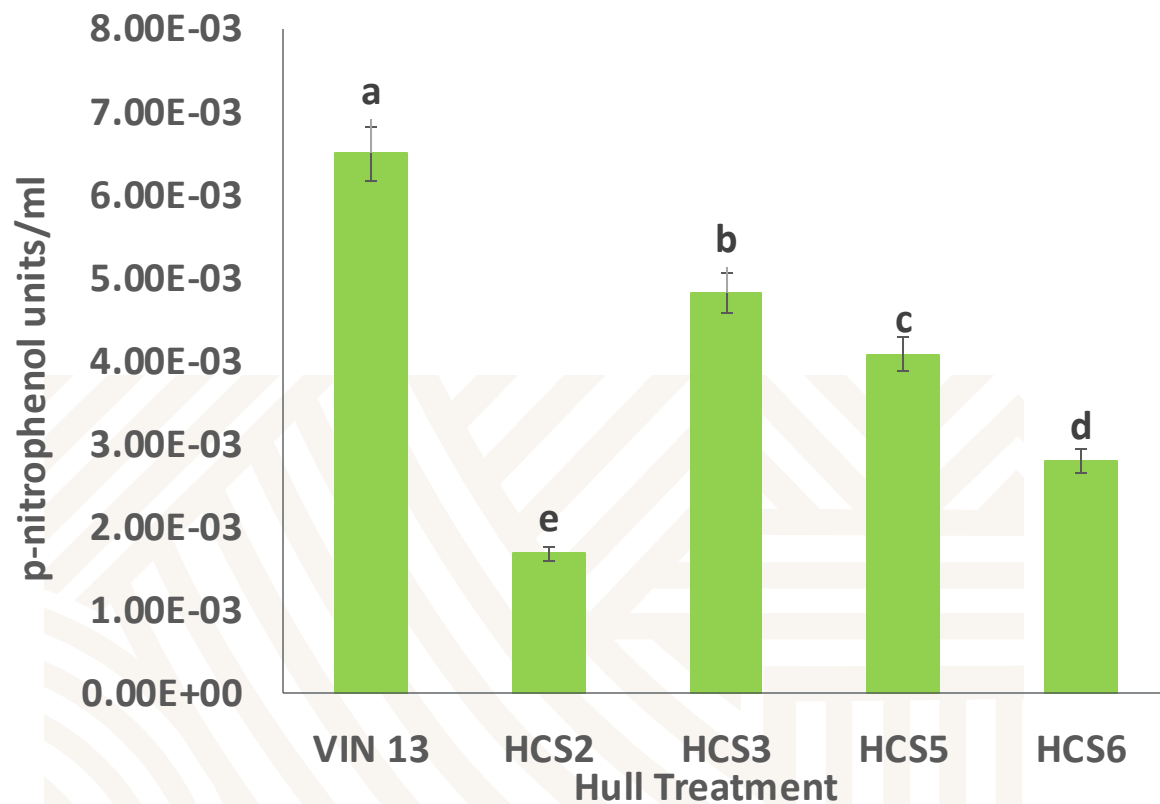
Most wines treated with high-chitin hulls showed lower haze potential than the VIN13 hull-treated wines.

The HCS6 treatment produced a protein-stable wine.

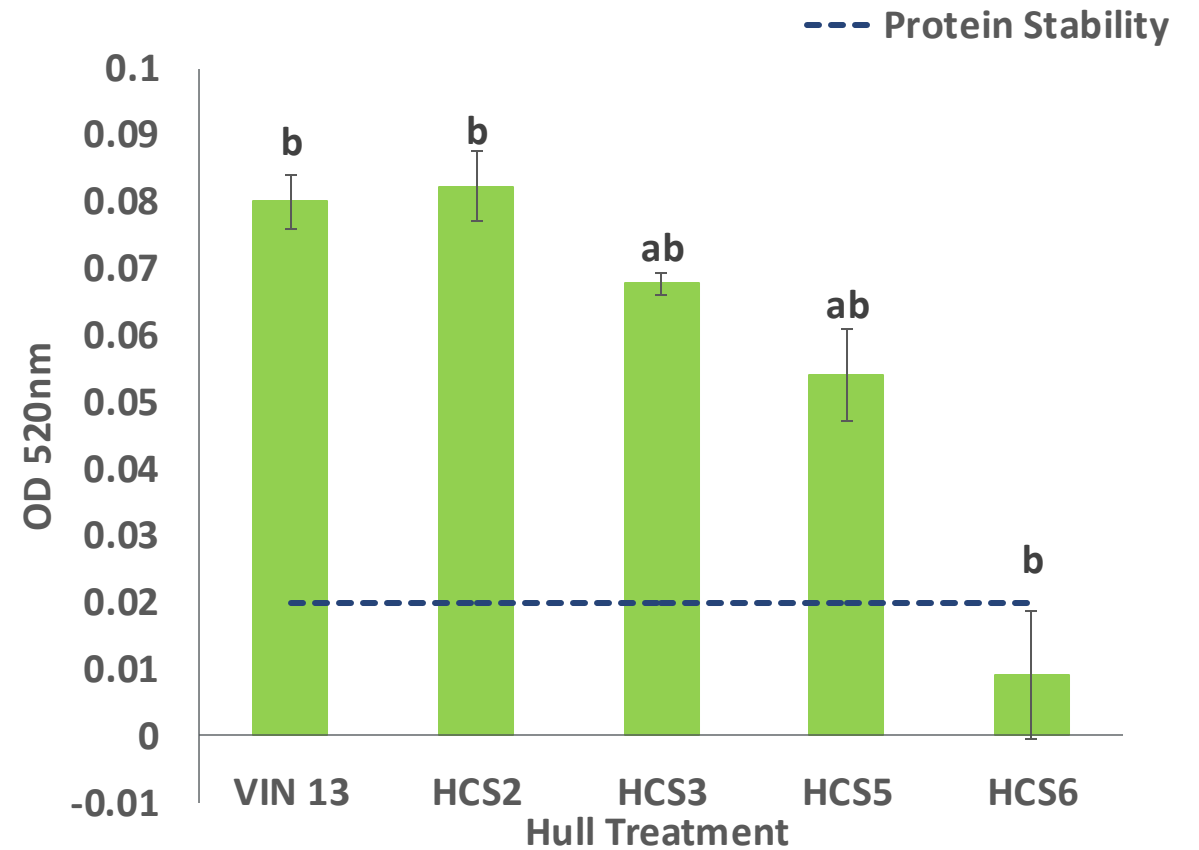


Key Findings: High-chitin hulls bind more chitinases and reduce the haze potential of wine

Chitinase Activity



Haze Potential



Acknowledgements

FAMILY

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KWV

SA WINE

NRF