Preventing white wine haze with *Botrytis cinerea* enzyme, BcAP8, and grape juice pasteurisation

Jacqui M. McRae1*, Nicholas I. Warnock2, Simon A. Schmidt1, Peter Anderson2, Paul A. Smith1

1 The Australian Wine Research Institute, PO Box 197, Glen Osmond (Adelaide) SA 5064, Australia
2 Flinders University, Sturt Rd, Bedford Park SA 5042, Australia
*Corresponding author’s email: jacqui.mcrae@awri.com.au

INTRODUCTION

- Wine haze is caused by grape proteins that unfold and aggregate.
- A *Botrytis cinerea* enzyme, BcAP8, destroys grape proteins on small scale. Larger scale trials have not been attempted.
- Flash pasteurising (FP) grape must at 90°C for 1 min also destroys proteins. Lower temperature FP and different FP times have not been explored.
- The potential for removing proteins from wines with FP at 75°C for 1, 2 or 3 mins and with BcAP8 addition was assessed in Muscat Gordo (MG) and Semillon (SEM).

FLASH PASTEURISATION

Grape musts were flash pasteurised at 75°C for 1-3 mins.

![Flash pasteurisation diagram](image1)

- FP alone reduced wine haze.
- BcAP8 enzymes were added to grape musts.

BcAP8 ENZYME ADDITION

- BcAP8 enzymes concentration was 5 or 12 mg/L.
- BcAP8 addition did not reduce haze.

![BcAP8 enzyme addition diagram](image2)

- Figure 1. FP of must for 1-3 min (75°C) reduced wine protein concentration.
- Figure 2. FP of must for 1-3 mins (75°C) reduced haze formation in wines.
- Figure 3. No significant change in wine protein concentration after BcAP8 addition.
- Figure 4. Haze formation of wines increased with BcAP8 addition.

CONCLUSIONS

- BcAP8 addition to must did not change the protein concentration in the SEM wine but increased haze formation in the heat test (80°C, 2 h).
- Flash pasteurisation of grape must (75°C, 1 min) alone reduced protein concentrations wines by around 60%. This stabilised the SEM wine, but a further 2 min FP at 75°C was needed stabilise MG wines.
- Flash pasteurisation of grape must may be a viable strategy for stabilising white wines.