



THE UNIVERSITY OF  
MELBOURNE

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FACULTY OF  
VETERINARY &  
AGRICULTURAL  
SCIENCES

# The effects of amino acid and proteins on foaming and bubbles in sparkling wine

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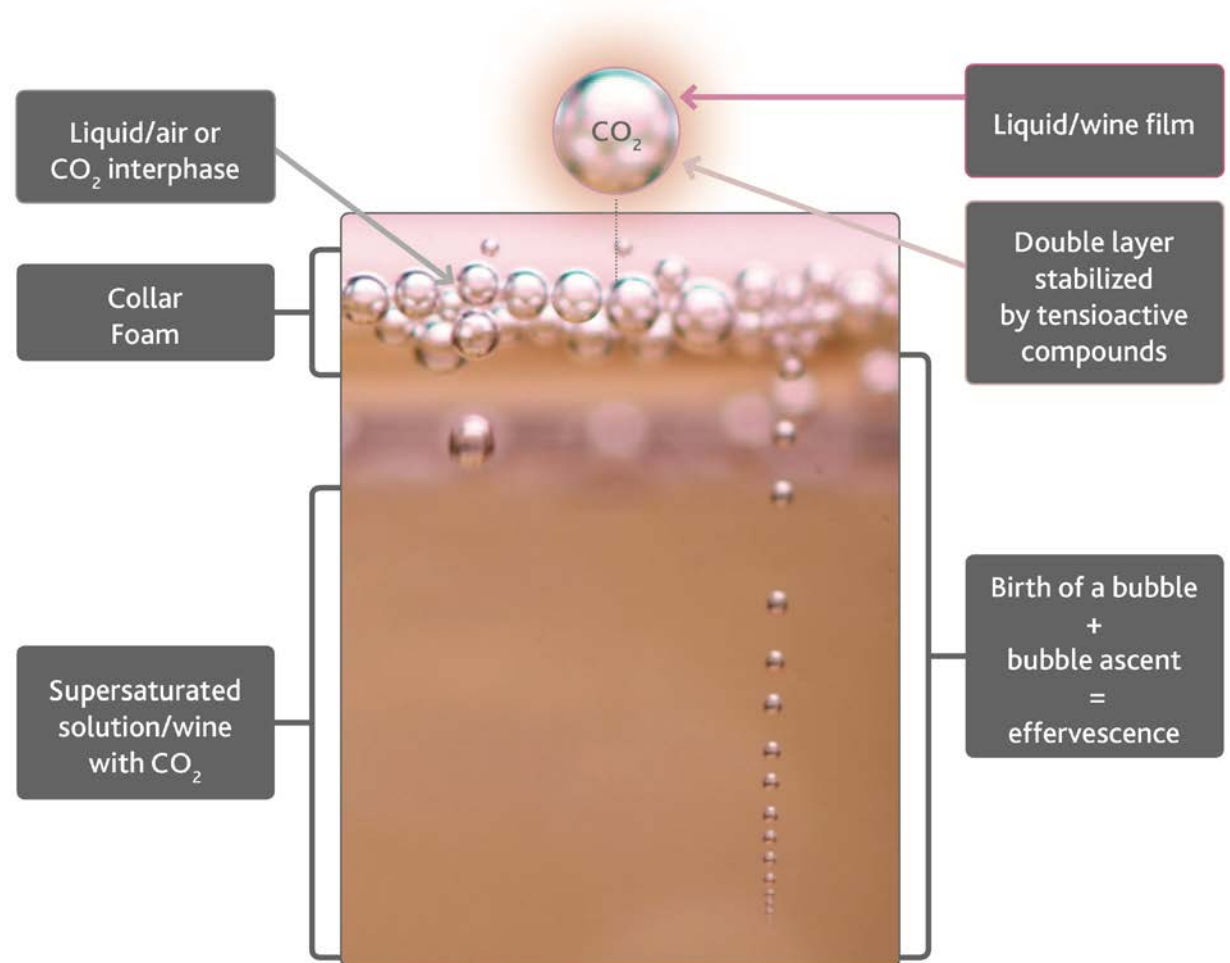


# INTRODUCTION

- Proteins are the main compounds associated with foam properties of sparkling wines.



foam volume  
foam height  
foam stability



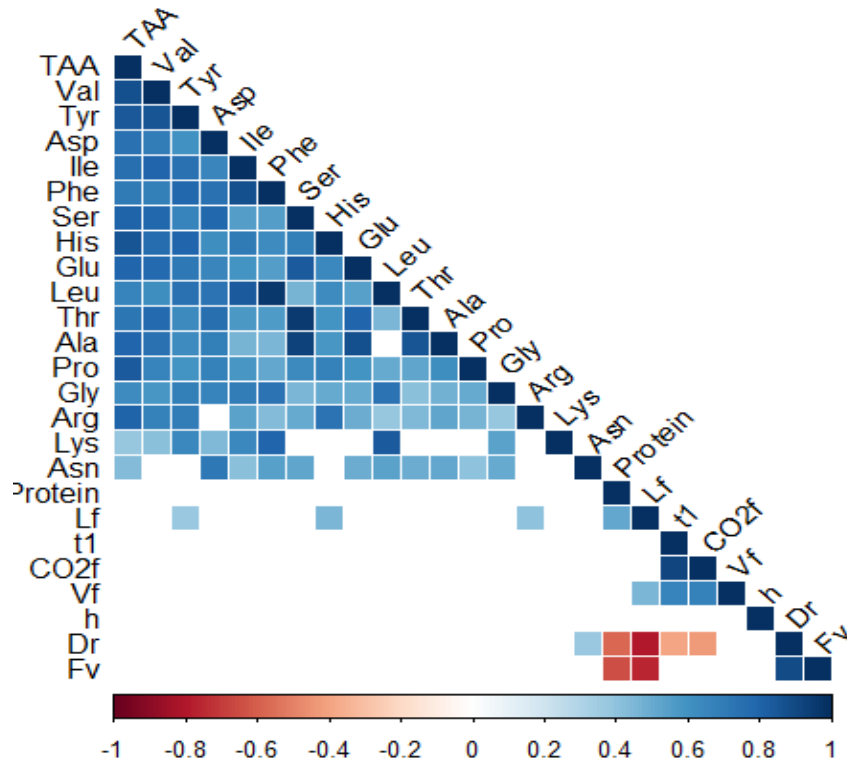
- Proteins have a positive effect on foam formation
- Increase of 20% of proteins resulted in increase of foam height
- Sparkling wines deprived of molecules  $> 3.5$  kDa did not produce any measurable foam.
- Sparkling wines containing glycosylated compounds and yeast mannoproteins have showed higher foam ability than wines containing just grape proteins
- Higher foaming ability for wines containing both grape (+) and yeast mannoproteins (-).

- Free amino acids in sparkling wines have been correlated with foaming parameters
- Significant correlations between foam stability and histidine, arginine and tyrosine (Culbert et al. 2017).
- However, the mechanism by which they contribute to foam stability remains unclear.
- Bubbles stabilization is very complex, more likely to be resulted from poly-macromolecular associations rather than of a single family of compounds



# Recent findings

INTERDEPENDENCIES

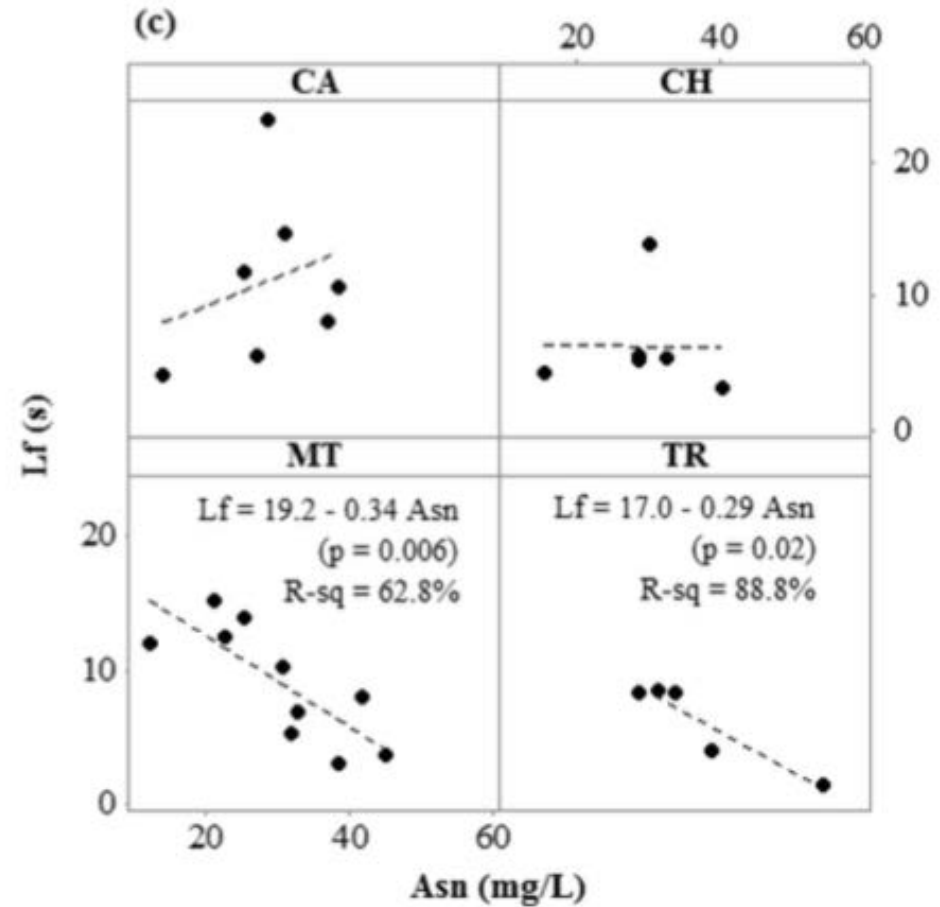
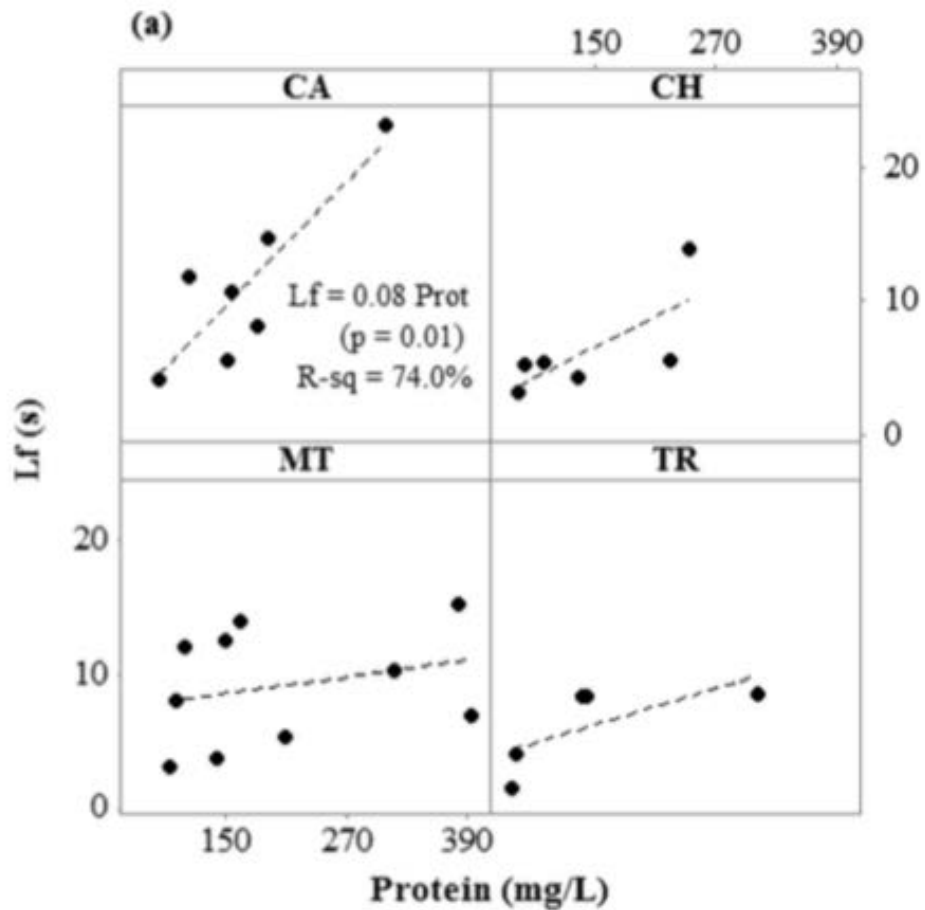


- protein and amino acids content were significantly correlated to parameters representative of foam stability



# Recent findings

ANTHONY D. BOURN

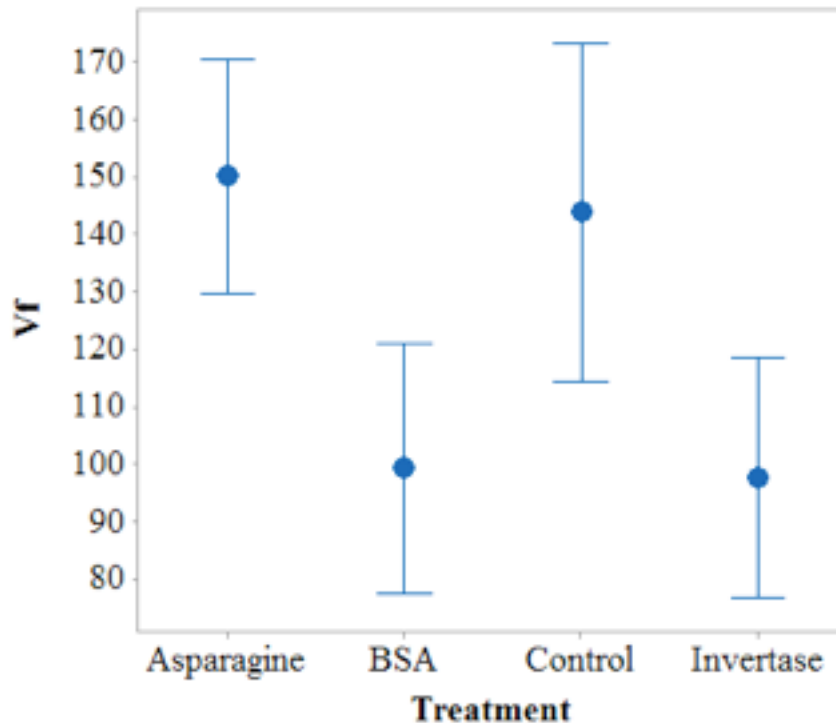




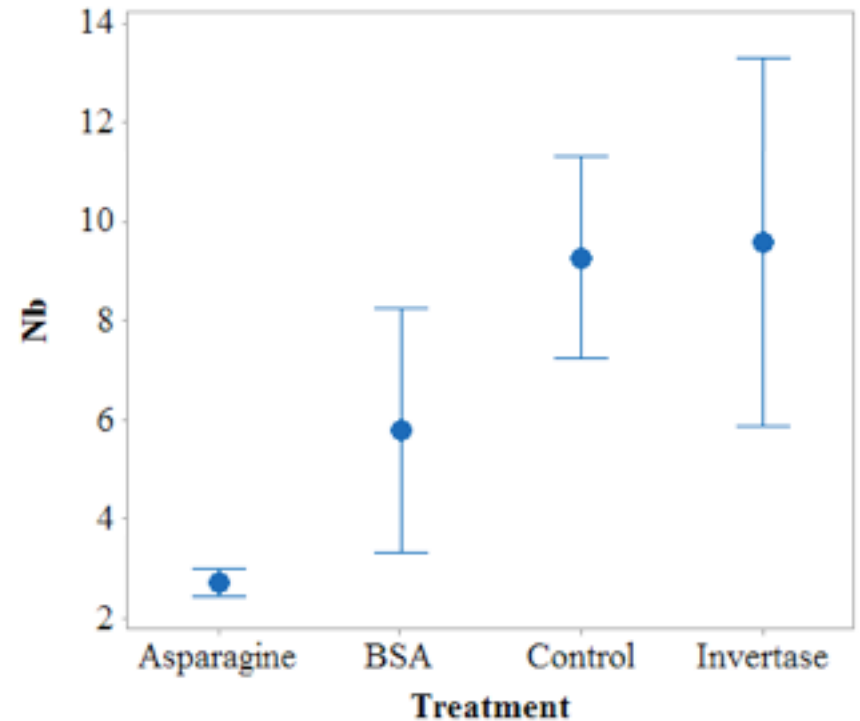
# Recent findings (unpublished)

INTERMEDIARIES

Interval Plot of Vf  
95% CI for the Mean



Interval Plot of Nb  
95% CI for the Mean





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