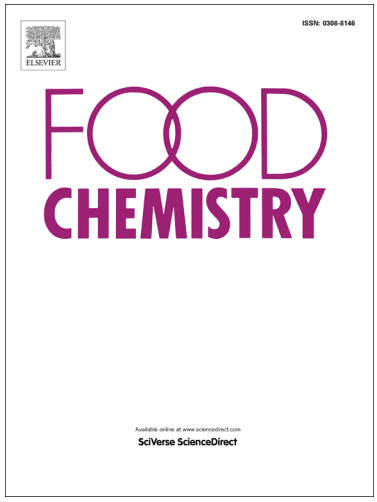

Predicting calcium in grape must and base wine by FT-NIR spectroscopy

Joana Vestia, João Mota Barroso, Helena Ferreira, Luís Gaspar, Ana Elisa Rato

PII: S0308-8146(18)31687-X
DOI: https://doi.org/10.1016/j.foodchem.2018.09.116
Reference: FOCH 23603

To appear in: *Food Chemistry*

Received Date: 12 February 2018
Revised Date: 18 September 2018
Accepted Date: 19 September 2018

Please cite this article as: Vestia, J., Mota Barroso, J., Ferreira, H., Gaspar, L., Elisa Rato, A., Predicting calcium in grape must and base wine by FT-NIR spectroscopy, *Food Chemistry* (2018), doi: https://doi.org/10.1016/j.foodchem.2018.09.116

Predicting calcium in grape must and base wine by FT-NIR spectroscopy

Vestia, Joana[1]; Barroso, João Mota[1]; Ferreira, Helena[2]; Gaspar, Luís[2]; Rato, Ana Elisa[1]

[1] – Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Universidade de Évora, Departamento de Fitotecnia, Apartado 94 7002 – 554 Évora, Portugal. Tel: 266760800

[2] – Adega de Borba., CRL. Largo Gago Coutinho e Sacadura Cabral, 7150 Borba, Portugal. Tel: +351 268 891 660

Corresponding author: aerato@uevora.pt

Key words: calcium; base wine; grape must; FT-NIR spectroscopy; alginate beads

Abstract:

Calcium content in sparkling wines may not exceed 80 mg/L due to the risk of aggregation with alginate capsules. The high calcium content usually found in wine and must emphasizes the need to develop alternative and appropriate techniques faster and cleaner than atomic absorption spectrometry (AAS). To obtain a robust model to predict calcium content, FT-NIR spectroscopy was used in 98 base white wine samples and 60 must samples from an Alentejo winery. The reference method for calcium determination was AAS technique, with a dry ashing sample procedure, as a prior treatment.

Results confirmed the ability of FT-NIR as an alternative technique to AAS, to predict calcium content in grape must and base wine. Advance knowledge of the calcium content in the grape must will help avoid obtaining a mixture of musts with a high calcium content in the same container.