Changes in Red Wine Composition During Bottle Aging: Impacts of Viticultural Conditions and Oxygen Availability

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INTRODUCTION

This project aimed to assess the influences of viticultural conditions & bottle ageing conditions on the evolution of red wine composition, especially aldehyde and low molecular weight sulfur compounds.

RESULTS

1. ComDim-PLS, complete balanced dataset

2. AMOPLS, 4 models

3. Heat map of the AMOPLS loading results, 4 models

CONCLUSIONS

- Generally, influences from the vineyard location & grape variety were maintained during bottling ageing.
- Maturity, oxygen availability and ageing time introduced subtle influences, but were still able to distinguish wine samples based on chemical analysis, regardless vineyard location and variety.
- Most variables showed similar evolution pattern during ageing, while the exceptions were potential indicators for specific viticultural conditions: vineyard location, grape variety and maturity.

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REFERENCE

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