FTIR-ATR, FT-RAMAN ad CG-FID assessment of discrimination of aged wine spirits under different conditions
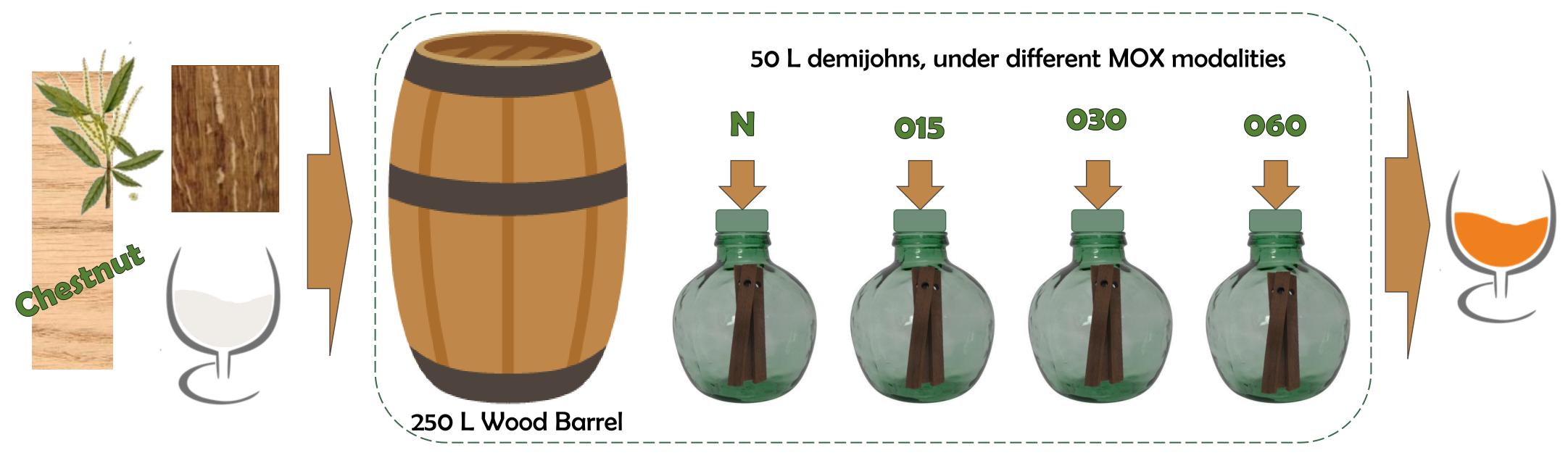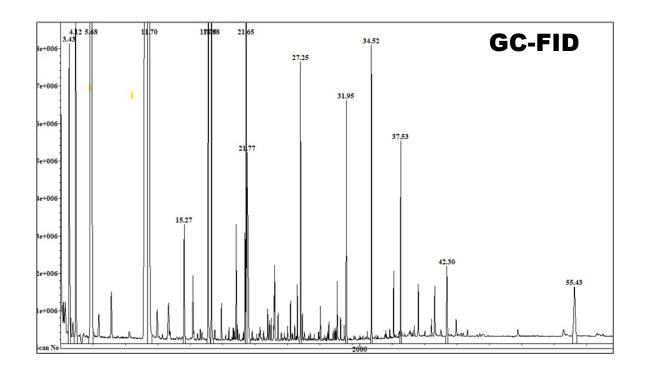
Ofélia Anjos,[1,2,3] Ilda Caldeira,[4,5] Cláudia Vitória,[6] Soraia I. Pedro,[1,3] Tiago A. Fernandes,[7,8] Laurent Fargeton,[9] Benjamin Boissier,[9] Sofia Catarino,[10,11] Sara Canas,[1,2]
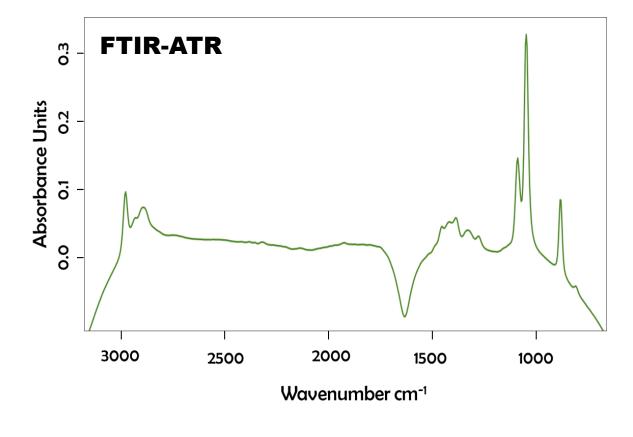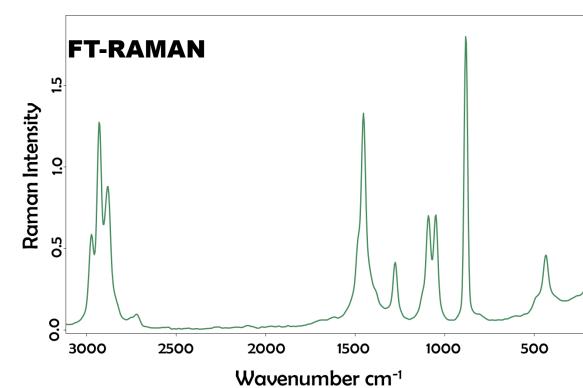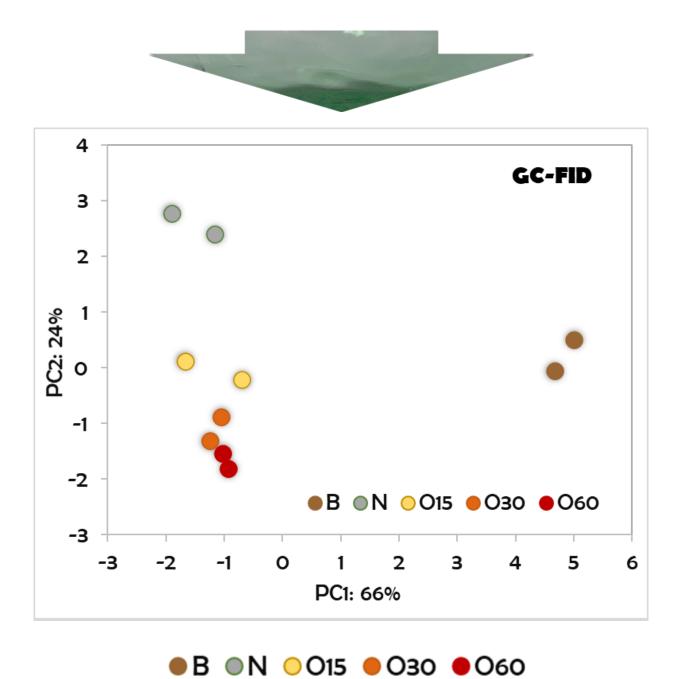
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Project site ⇨

The aim of this work was to evaluate the performance of FTIR-ATR, FT-RAMAN and GC-FID to discriminate wine spirits aged with chestnut wood during one year in 250 L wooden barrels and in 50 L demijohns with staves combined with different micro-oxygenation levels.
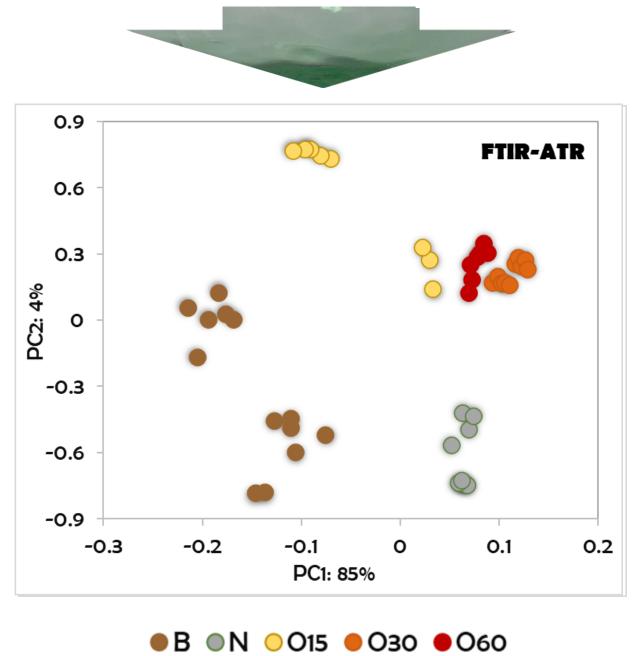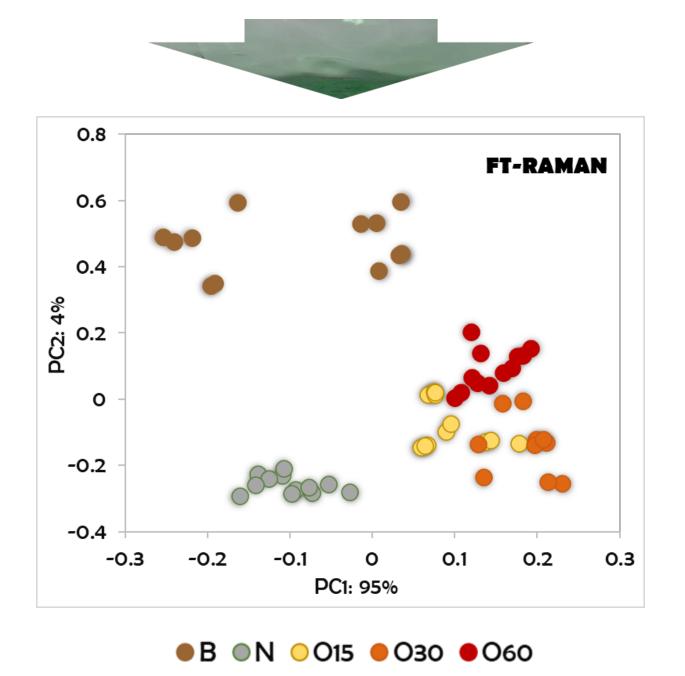
Chestnut

50 L demijohns, under different MOX modalities

N   O15   O30   O60

250 L Wood Barrel

GC-FID

FTIR-ATR

Absorbance Units

Wavenumber cm⁻¹

FT-RAMAN

Raman Intensity

Wavenumber cm⁻¹

GC-FID

PC2: 24%

PC1: 66%

B N O15 O30 O60

FTIR-ATR

PC2: 4%

PC1: 85%

B N O15 O30 O60

FT-RAMAN

PC2: 4%

PC1: 95%

B N O15 O30 O60

These outcomes show that FTIR–ATR and FT-RAMAN are powerful techniques for the quality control of wine spirits, since they allow a quick discrimination between samples produced with different methodologies.

Abstract

XV ENCONTRO DE QUÍMICA DOS ALIMENTOS
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