

Differences in Odor-Active Compounds of Trincadeira Wines Obtained from Five Different Clones

GORETI BOTELHO,^{†,‡} ARLETE MENDES-FAIA,[‡] AND MARIA CRISTINA CLÍMACO^{*,†}

INRB, I.P., L-INIA - Estação Vitivinícola Nacional, 2565-191 Dois Portos, Portugal, and CGB-Centro de Genética e Biotecnologia, Universidade de Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal

Odorant compounds of five young clonal red wines made from *cv. Trincadeira*, a native grape variety of *Vitis vinifera* L. grown in Portugal, were studied using 2001 and 2003 vintages. The study was carried out using gas chromatography–mass spectrometry (GC-MS) for compound identification and the gas chromatography–olfactometry (GC-O) posterior intensity method to detect the potentially most important aroma compounds. Forty-one odorant peaks were detected by GC-O analysis, from which 31 were identified by GC-MS. The odorant compounds with the highest odorant average intensities are 3-methylbutanoic acid, 2-phenylethanol, 2,5-dimethyl-4-hydroxy-3(2H)-furanone, and 4-vinylguaiacol. The GC-O analysis showed odor intensity differences among compounds, which was confirmed by analysis of variance (ANOVA). Principal component analysis (PCA) and hierarchical cluster analysis (HCA) showed that the five clonal wines from the 2001 vintage were more similar than those from the 2003 vintage. Moreover, stepwise linear discriminant analysis (SLDA) demonstrated that the factor vintage has influence on the Trincadeira clonal red wine odorant profile differentiation.

KEYWORDS: GC-O posterior intensity method; odorant compounds; Trincadeira; clonal red wines; vintage

* Corresponding author. Tel: +351261712106. Fax: +351261712426.
E-mail: evn.mclimaco@mail.net4b.pt.

[†] L-INIA - Estação Vitivinícola Nacional.

[‡] Universidade de Trás-os-Montes e Alto Douro.