

Evaluating the typicality of the aroma of ‘Syrah’ tropical wines from the Sub-middle São Francisco Valley employing gas chromatography coupled to olfactometry detection (GC-O)

Barbará, J. A¹, Marques, A. T. B², Nicolli, K. P¹, Queiroz, L. B.¹, Souza-Silva É.A.¹, Correa, L. C.², Welke, J. E³, Zini, C. A.¹

¹Instituto de Química, Universidade Federal do Rio Grande do Sul, UFRGS, CEP 91501970, Porto Alegre, Brasil; ²Empresa Brasileira de Pesquisa Agropecuária (Embrapa Semiárido), CEP 56302970, Petrolina, Brasil; ³Instituto de Ciência e Tecnologia de Alimentos, UFRGS, CEP 91501970, Porto Alegre, Brasil. E-mail: claudialcaraz@gmail.com

The production of wines in the Sub-middle São Francisco Valley is recent and has been highlighted given the peculiar environmental conditions of that region that allows for two or more harvesting season of grapes (*Vitis vinifera*) yearly. Special attention goes to the grapes from Syrah cultivar and its wines. With the aim to evaluate the peculiarities of wines produced in that region, this study focused on the characterization of the volatile profile and the determination of key odorant compounds in ‘Syrah’ wine. ‘Syrah’ wine was prepared at Embrapa Semiarido, Petrolina-PE from grapes obtained from a winery located in the city of Casa Nova-BA. The volatile compounds were extracted via headspace by solid phase microextraction (HS-SPME) and subsequently identified by gas chromatography coupled to either mass spectrometry (GC-MS) or flame ionization detector (GC-FID). The olfactory impact of these volatile compounds was assessed via gas chromatography coupled to olfactometry detection (GC-O), employing the OSME technique with four panelists evaluating the compounds eluting from the chromatographic column of each sample (four replicates each). Amongst the 77 compounds tentatively identified by GC-MS, 33 were generated in the aromagram as key odorant compounds. Twelve esters (36.36% of total area) and 10 alcohols (30.30% of total area), as well as other components comprising a diversity of chemical classes (ketones, terpenes, aldehydes, hydrocarbons and sulfur compounds). Noteworthy (score ≥ 4.5 in a scale of 10) are the odor intensities generated by: diethyl butanoate (“stinky”), 2-phenyl-ethyl acetate (“roses”), 3,4-dimethyl-2-hexanol (“fruity”), ethyl hexanoate (“fruity”), acetic acid (“vinegar”), 3-methyl-1-butanol (“overripe fruit”) and a compound not identified described as “fruity”. In summary, the GC-O technique was successfully applied to evaluate the peculiar aromatic profile of ‘Syrah’ wines. To be best of our knowledge this is the first work reporting the assessment of key odor compounds in wines produced in the Sub-middle São Francisco Valley region.

Theme: sensory profile

Area: Enology

Acknowledgment: FAPERGS, Capes, and Miolo wine group® for providing the grapes