

Characterization of volatile and sensory profile of Cabernet Sauvignon wines produced in six different vineyards of the Campanha Gaúcha region, Brazil.

Nicolli, K.¹, Lago, L.¹, Barbará, J.¹, Marques, A.², Guerra, C.³, Santos, H.³, Welke, J.⁴ and Zini, C.¹

¹ *Chemistry Institute, UFRGS. Zip Code 91501970, Porto Alegre, Brazil;* ² *Embrapa Semi-Arid. Zip Code 56302970, Petrolina, Brazil;* ³ *Embrapa Grape and Wine. Zip Code 95700000, Bento Gonçalves, Brazil;* ⁴ *Institute of Food Science and Technology, UFRG. Zip Code 91501970, Porto Alegre, Brazil; E-mail: karinenicolli@yahoo.com.br*

Cabernet Sauvignon wines are among the most consumed in the world. The Campanha Gaúcha region, located in the southernmost state of Brazil, has excelled in the production of fine wines. The enological quality of a grape cultivar is primarily related to soil and climatic conditions of the cultivation region, which include differences from the soil, temperature, rainfall, solar radiation and relative humidity. However, within a given region, the differences in enological quality among the vineyards are related to soil management and plant characteristics. Thus, this study aims to characterize the volatile and sensory profile of Cabernet Sauvignon wines produced from grapes harvested in six vineyards (with geographic coordinates ranging from 55°30'W to 55°90'W and 31°30'S to 30°30'S) located along of the Campanha Gaúcha region. The effect of vineyard location on the quality of the wine produced was evaluated by quantitative descriptive analysis (QDA), comprehensive two-dimensional gas chromatography coupled to mass spectrometry by flight time (GC×GC/TOFMS) and gas chromatography-olfactometry (GC-O). Using QDA, significantly different sensory profiles ($p \leq 0.05$) were observed for samples from 6 vineyards. Wines made from grapes grown in vineyards located further west of Campanha Gaúcha region obtained the highest grades in sensory evaluation in relation to the smell-taste harmony and aroma of red fruits. In addition, these samples were slightly associated to negative attributes of quality, such as vegetable, herbaceous or undesirable flavor. The use of GC×GC and GC-O allowed verifying that the presence of phenylethyl acetate, isoamyl acetate, ethyl hexanoate and ethyl decanoate is related to higher aromatic quality appointed to these wines by QDA. These results prove that even when the grapes are grown in the same region, differences in the volatile composition and therefore in the sensory profile can be observed.

Theme: Química Enológica

Area: Enologia

Apoio: FAPERGS, CNPq, CAPES, Supelco, Embrapa Grape and Wine