

Profile of volatile components of high altitude 'Sauvignon Blanc' wines from different locations in Serra Catarinense

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High altitude regions of Santa Catarina state are potential producers of viniferous grape due to their technological and phenolic maturation indices that result in wines differentiated by their intense color, aromatic definition and taste balance. This study aimed to evaluate the profile of volatile compounds of 'Sauvignon Blanc' wines produced with grapes grown in different locations in the mountainous region of Santa Catarina. The wines were produced from grapes obtained from 4 wineries in Santa Catarina state in the 2018 and 2019 harvests. Wineries were located in the municipalities of Campo Belo do Sul (CBS, at 927 m), Rancho Queimado (RQ, at 981 m), Água Doce (AD, at 1,260 m) and São Joaquim (SJ, at 1,301 m). The volatile components were extracted by solid phase microextraction (SPME). Before evaluating the profile of volatile components, the extraction procedure was optimized through a complete factorial and Box-Behnken designs in order to obtain the optimal conditions of extraction (36°C for temperature, 30 minutes of extraction and 1.80g of NaCl). The samples were analyzed by gas chromatography coupled to a mass spectrometer (CG-MS). For comparison study, principal component analysis (PCA) and hierarchical groupings (HCA) were used to assess the differences and/or similarities in the chemical composition of volatile compounds in high altitude wines from different locations in Santa Catarina in both 2018 and 2019 harvests. The analysis of volatiles by CG-MS revealed similar chromatographic profiles among wines of 4 wineries for both harvests, which presented mostly esters and terpenes in the composition, such as ortho-cymene, ethyl octanoate, 2 phenyl ethyl acetate, ethyl decanoate and ethyl dodecanoate. These compounds are responsible for the fruity and floral aromas characteristic of young wines. PCA and HCA revealed some similar compounds among wines from different regions (such as ethyl octanoate, ethyl hexanoate, isoamyl alcohol, ethyl decanoate). In general, our data show the complexity of factors that can influence the composition of volatile compounds of wines produced from 'Sauvignon Blanc' grapes from different regions of high altitude in Santa Catarina state. The characterization of these components may help in the future to obtain the designation of origin for high altitude 'Sauvignon Blanc' wines in Santa Catarina.

Keywords: Food quality, volatile compounds, high altitude wines

Acknowledgments: UFSC, CNPQ, FAPESC, MCTI/FINEP/CTInfra, Vinícola Abreu Garcia, Vinícola Villaggio Grando, Vinícola Villaggio Bassetti, Fazenda Teramilia