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DETERMINATION OF AROMA COMPOSITION IN TROPICAL WINES FROM NORTHEAST OF BRAZIL

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The production of traditional wines in the world is located in temperate climates in Europe, in North and South America, South Africa and Oceania. In these places, grapes can be harvested only once a year. The tropical wines are being produced in Thailand, India, Venezuela and northeastern Brazil. In these regions, it's possible to harvest two or three times a year. The Sub-middle São Francisco river Valley is the second largest region producing fine wines in Brazil since 25 years ago, and presents a tropical semiarid climate, with edaphoclimatic characteristics that allow to get harvests throughout the year. These characteristics favor to obtain different wine types, presenting quality and regional identity. The aim of this study was to determine the aroma composition of white and red tropical wines elaborated in two seasons of 2009. Grape harvest was carried out in June (harvest I) and November (harvest II) for white cultivars Vedejo (VE), Viognier (VI) and Sauvignon Blanc (SB) and reds Petit Verdot (PV), Tempranillo (TE) and Syrah (SY). The winemaking process was carried out by applying the traditional method, in stainless steel tanks of 200 L, with alcoholic and malolactic fermentations conducted at 25°C and 18°C, respectively. After stabilization of the wines by cold (0°C for 30 days) they were bottled and then analyzed. Esters, acids and 2-phenylethanol were extracted by liquid-liquid extraction (LLE) with ether and hexane and it was added 3-octanol and heptanoic acid as internal standards. While, alcohols and ethyl acetate were quantified by direct injection of the wine distillates with addition of 4-methyl-2-pentanol as internal standard. All compounds were analyzed in triplicate by gas chromatography with flame ionization detector (GC-FID) and quantified using internal standardization. Multivariate statistical analysis was applied (principal components analysis – PCA) to discriminate groups and also Tukey means test (p=5%). Twenty four aroma compounds were quantified: 6 carboxylic acids, 8 alcohols and 10 esters. PCA allowed to discriminate between samples according to the two crops, as well as to the wine type. Differences found between the concentrations of aroma compounds in red and white wines highlight the importance of genetic and environmental factors influencing quality and typicality. The potential key odour- active compounds of the Brazilian tropical wines were ethyl acetate, 3-methyl-1-butanol, 2-phenylethanol and octanoic acid. This work represents the first step of researches to characterize the identity and typicality of tropical wines produced in Brazil and worldwide.