

P-137

Grape Juice Characterization by its Free Amino Acid Composition

Miele, A. ^{1*} **L.; Rizzon, A.** ¹; **Zanotto, D. L.** ²

¹Embrapa Uva e Vinho, Bento Gonçalves, RS, Brazil

²Embrapa Suínos e Aves, Concórdia, SC, Brazil

Grape juice is an important segment of the Brazilian vitiviniculture, which production is concentrated in the Serra Gaúcha region, State of Rio Grande do Sul, Brazil. In average, over than 100 million kilograms are crushed each year for this purpose. Considering the economic and social importance of grape juice industry, an experiment was carried out with the objective to characterize Brazilian grape juice by its free amino acid composition. Four commercial grape juices made from American/hybrid varieties 'White Niagara', 'Isabella', 'Concord' and 'Ives' + 'Jaquez' (50% each one) were

analyzed according to their free amino acid composition. Replicates of 1 ml samples of each juice were lyophilized and reconstituted by adding 0.5 ml of a sodium citrate buffering solution with norleucine as internal standard. Analyses were performed on an amino acid autoanalyzer. Sixteen amino acids were detected and considered, i.e., lysine, histidine, arginine, aspartic acid, threonine, serine, glutamic acid, proline, glycine, alpha-alanine, valine, methionine, isoleucine, leucine, tyrosine and phenylalanine. Besides the individual amino acids, three relationships were taken in account, i.e., alpha-alanine/arginine, alpha-alanine/proline and proline/arginine. The data were submitted to the principal component analysis. Results show that most variables had strong correlation mainly with factors 1 and 2. Indeed, factor 1 represented 46.37%, factor 2 36.39% and factor 3 17.24% of the total variation. 'White Niagara' grape juice was characterized by phenylalanine, tyrosine, isoleucine, leucine, proline, valine, glycine and the proline/arginine ratio. 'Isabella', by arginine, histidine and aspartic acid. 'Concord', by alpha-alanine and alpha-alanine/arginine and alpha-alanine/proline ratios. 'Ives' + 'Jacquez', by threonine, glutamic acid and lysine. This work is an important contribution to the characterization of the Brazilian grape juice made from American/hybrid varieties.

Keywords: Vitis, American varieties, 'Isabella', 'Concord', 'White Niagara', 'Ives', 'Jacquez'

*Corresponding author: miele@cnpuv.embrapa.br