EVALUATION OF THE QUALITY OF DOMESTIC CACHAÇA (SUGAR-CANE SPIRITS) FROM MINAS GERAIS APPLYING PRINCIPAL COMPONENT ANALYSIS

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The increasing in the consumption of sugar cane spirits – the cachaça – with good quality and the possibility of exportation require that the fabrication process of this drink must be based in practices determined in a criterion way. As a result, the *Ministério da Agricultura, Pecuária e Abastecimento* (MAPA) establishes limits to some cachaça parameters based on its alcoholic graduation (AG), the volatile components sum (VCS), such as aldehydes (Al), acids (Ac), esters (Es), furfural and superior alcohols (AS), and the maximum drifts allowed to methyl alcohol (Me), cupper ion (Cu^{2+}) and volatile individual components. The cachaça does not obey to the MAPA quality patterns when it does not respect at least one of the defined limits[1].

The aim of this work was to evaluate the domestic cachaça from Minas Gerais that were analyzed by the MAPA methodology. To this evaluation were used the Principal Component Analysis (PCA) as the non supervised pattern recognition method.

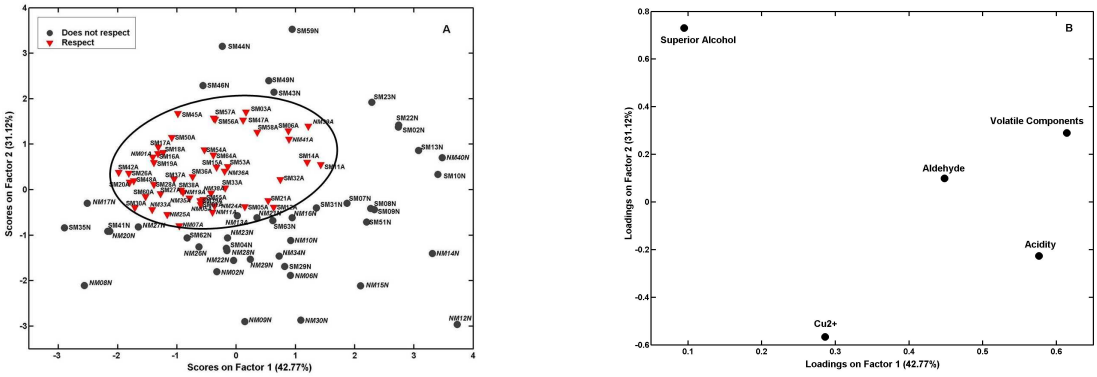

Figure 1. Score and loading graphics to the factors 1 and 2.

It is about 94 samples and 8 variables were analyzed. According to the matrix (94x8) built, it was realized the PCA method with the auto-scaled data. In the figure 1, the score graphic, the A one, indicates the cachaça samples that respected to the required patterns were situated in the center, while the other ones, that did not respect the patterns specified, were distributed around the graphic. The B graphic, the loading one, indicated which variables contributed to this distribution, only being these ones the AS, VCS, Al, Ac, and Cu^{2+} that presented influence to the discrimination among the cachaças. Certainly to this fact, they were the most important variables to the quality evaluation. The variables AG, Es e Me were not influential to the discrimination and because of this they presented similar values, generally respecting the defined limits.

The authors would like to thank to the CNPq for the financial support.

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