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Consumer perception of red wine from Brazilian tropical semi-arid winery added of organic acids for pH adjusting

D.G.C. Freitas*¹, A.C.T. Biasoto², G.E. Pereira^{2,3}, J.B. Oliveira², L.R.V. Moraes²

¹*Embrapa Food Technology, Brazil*, ²*Embrapa Semi-arid, Brazil*, ³*Embrapa Grape and Wine, Brazil*

This work aimed to evaluate the addition of organic acids to red wine for pH adjusting, regarding consumer sensory and hedonic impression. Wines obtained from an experimental design adding tartaric, lactic and malic acid to the must (T1 to T8), and a control without acid addition (T9) were presented to 44 wine consumers, who were asked to score their overall liking using a 9-point hedonic scale and to provide up to four words to describe each sample, using the open-ended question. Consumers' descriptions were grouped in 29 categories considering word synonymy mentioned by more than 10% of participants. Correspondence analysis was applied explaining 61.97% of the data variability ($\chi^2=250.12$, $p<0.111$). Results showed that 21 categories were able to characterize the wines, being samples T5, T3, T7 and T8 described as tasty, with good aroma, pretty colour, fruity flavour, residual flavour and astringent. Second group of T6, T2 and T4 were associated with terms such as acid, dry, full-bodied, rounded, opaque, alcoholic, with intense colour, intense aroma, alcoholic aroma, sweet aroma, which is in agreement with their highest mean scores given to these groups. Differently, T1 was described additionally to descriptors of second group as bitter and with intense flavour and T9 (control) presented descriptors of sulphide, uncharacteristic and unpleasant aroma. Both had lower acceptance scores. PLS regression was performed ($R^2=0.774$) showing the attributes that correlate negatively (uncharacteristic aroma, bad flavour and watery) and positively (alcoholic and intense aroma) with acceptance. Results demonstrated that addition organic acids increased acceptability of wines, although tartaric acid has resulted in intense bitter taste and consequent lower acceptability, observed in which this pure acid was added (T1). Many sensory terms have been used to describe consumer impression of red wines but a few were efficient to drive their overall liking, as demonstrated by PLS results.

Keywords: tropical wine, open-ended question, consumer's perception