



Effects of different winemaking processes on enological characteristics of tropical wines in Brazil

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Tropical wines started being produced 30 years ago. The wine production in the São Francisco Valley-SFV, Northeast of Brazil, located in a tropical semi-arid climate, needs technologies to allow vines to be produced throughout the year. In this region, grapes are harvested according to the enologist demand and wines have been elaborated differently in many seasons, showing typical characteristics according to the month of the year. A specific characteristic of the grape bunches produced in the SFV have pointed to different visual presentation, as compared to bunches produced in other regions. Bunches stems have been harvested green, even in different seasons, as compared to other regions, where bunches have lignification and brown top. The problem observed for red winemaking in the SFV is that bunch stems have been broken as passed on destemmer, and wines have been produced with some quantities of stems, even during maceration. Some commercial wines have been made by using manual destemming, and result is very different as compared with other wines. In order to evaluate this characteristic, this study was carried out to evaluate the effects of a manual or machine grape destemming on grape and wine characteristics in the SFV. Syrah grapes were harvested in July 2016 from a partner winery in the region, targeted to elaborate red guard wines. Grapes were weighed, and 20 kg of grapes were used for winemaking, in triplicate. Three times of 20 kg were destemming by hands and stems and grapes were weighed, and the same was made for other 20 kg in triplicate that were destemmed by using a commercial destemmer. Wines were elaborated in glass tanks of 20 L and maceration time was seven days during alcoholic fermentation at 25±1°C. After this time, grapes were pressed and wines were placed in 10 liters glass tanks for malolactic fermentation, at 18±1°C for twenty days. Wines were cold stabilized at 5±1°C for 10 days than bottled and analyzed 20 days after bottling, to determine classical enologic parameters and phenolics by spectrometer. Results showed that wines presented no differences for alcohol degree, density, free and total SO₂, dry extract, total and volatile acidities, color intensity, total monomeric anthocyanins and antioxidant capacity. Differences were found for wines elaborated from grapes manually destemmed, presenting higher values of pH and lower values of total polyphenol index-TPI and total phenolics than wines elaborated from grapes destemmed by machine. Sensorial evaluation carried out by enologists described wines from manual destemming grapes as presenting better gustative characteristics than wines from machine destemming grapes. Tannin extraction from stems caused bitterness in wines from grapes destemmed with machine. For red wines, manual destemming could be a useful step in winemaking allowing improving quality of red wines from SFV in Brazil.

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