



Quality of tropical white wines from different varieties produced in the São Francisco Valley, Brazil

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The vitiviniculture in the São Francisco Valley is recent and in full development activity. The production of grapes for fresh consumption was introduced in São Francisco Valley region in the 50s and the production of grapes for wines is a more recent activity with the first activities in the middle 80s with a great increase only in 2000. Nowadays the São Francisco Valley is the second largest producing region of fine wines using *Vitis vinifera* varieties in Brazil. The wine industry in the São Francisco Valley has unique soil and climate characteristics, differing from other traditional areas. It is located in semi-arid tropical climate zone, with an annual average temperature of 26°C, high levels of solar radiation and maximum annual rainfall of approximately 500 mm. These factors, combined with the lack of winter and the availability of water for irrigation, allow the vines to have a continuous cycle, with production of grapes and wines throughout the year and up to three harvests per year. The aim of this study was to evaluate the physicochemical characteristics of tropical white wines produced at the São Francisco Valley with three different grape varieties. Grape varieties 'Sauvignon Blanc', 'Chenin Blanc' and 'Chardonnay' were harvested in November, 2014 and November and June, 2015 (2nd, 3th and 4th cycle of production) in an experiment conducted at Embrapa Semi-arid experimental field in Petrolina, Pernambuco, Brazil (09°09' S, 40°22' W, 365.5 m). In this experiment the plants were conducted in an vertical trellis system, grafted on rootstock Paulsen 1103 and drip irrigated. Winemaking process involved the following steps: *debourbage* (clarified before fermentation) with bentonite (0.5 g L⁻¹), alcoholic fermentation (18±1°C), new *debourbage* with bentonite (0.5 g L⁻¹) during 20 days at 6°C and cold stabilization (0°C) for 10 days. Wines were bottled and stored in wine cellar (18°C e 60% of humidity) for one months. Afterwards, the following physicochemical analyses were carried out: total and volatile acidity, pH, total dry extract, density, alcoholic content and free and total sulfur dioxide. According to the results, the alcohol content of the wines varied between 10.55 and 14.54% v/v, the pH from 3.30 to 4.02 and the total acidity between 3.45 and 10.50 g L⁻¹. Regarding the results of volatile acidity and total sulfur dioxide of the wines, they are in accordance to the limits of the Brazilian legislation and can be consumed. In general, the variety 'Chenin Blanc' resulted in white wines with a lower pH value (ranging between 3.3 and 3.6). While 'Sauvignon Blanc' wines presented higher total acidity (up to 10.50 g L⁻¹), alcohol content (ranging between 12.51 and 14.54%) and dry matter content (21.30- 45.80 g L⁻¹). Chardonnay wines showed lower alcohol content and higher pH value.

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