



Phenolic compounds and antioxidant activity of commercial tropical red wines (*Vitis vinifera*) from the São Francisco Valley, Brazil

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The sub-middle region of the São Francisco Valley (SFV), located in northeastern Brazil, is different from other Brazilian wine producing regions and major world wine producing areas, because this region has specific climatic conditions, since the SFV is situated between the southern hemisphere parallel of 8-9° and at 350 m altitude in a semi-arid tropical climate zone, with average temperatures of 26°C, high intensity sunlight (3,000 h/year) and low annual rainfall (about 500 mm) (Teixeira et al., 2013). These different weather conditions, coupled with the absence of a winter and application of water by irrigation, make it possible to obtain 2 crops in the SFV in the same year. In order to learn about tropical wines better, such as those produced in SFV, there is a need to characterize these products in order to show the specificities of the qualities related to their region of origin. Among the chemicals that are worth mentioning in assessing the potential of a region to produce wines of good quality, there is the phenolic composition. Objective of this work was to study the phenolic composition and antioxidant activity of commercial red wines made from grapes *Vitis vinifera* L. grown in a tropical climate region. Seven samples of commercial red wines were analyzed. The samples were provided by the five wineries installed in SFV area. All wines showed phenolic compound values according to other traditional regions and high antioxidant activities. In total, 20 phenolic compounds were quantified by HPLC-DAD-FLD, especially malvidin-3-O-glucoside, catechin, and procyanidin B2, which were the main ones, followed by gallic acid, syringic acid, kaempferol, and rutin. The antioxidant activity was positively correlated with the content of syringic acid > peonidin 3-O-glucoside > p-coumaric acid > (+) – catechin > epigallocatechin gallate > cyanidin 3-O-glucoside > procyanidin A2 > (-) – epicatechin highlighting the contribution of these bioactive compounds with the potential of tropical wines. This study shows that it is possible to obtain wines with good bioactive component content and high antioxidant activity in such tropical climates as in SFV, the data contribute the knowledge of the wine producing potential of new regions worldwide.

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