



## Effects of Different Rootstocks on Physico-Chemical Composition of Tempranillo Tropical Wines from Brazil

Thiago Felipe Farias<sup>1</sup>, Ana Júlia de Brito Araújo<sup>1</sup>, Gildeilza Gomes Silva<sup>1</sup>, Juliane Barreto de Oliveira<sup>1</sup>, Russaika Lírio Nascimento<sup>1</sup>, Vanessa de Souza Oliveira<sup>1</sup>, Aline Camarão Telles Biasoto<sup>1</sup> and Giuliano Elias Pereira<sup>2\*</sup>

<sup>1</sup>Embrapa Semiárido, Petrolina, PE, Brazil.

<sup>2</sup>Embrapa Uva e Vinho/Semiárido, BR 428, km 152, CP 23, CEP 56.300-000, Petrolina, PE, Brazil.

E-mail: [gpereira@cpatsa.embrapa.br](mailto:gpereira@cpatsa.embrapa.br)

### Abstract

The Sub-middle São Francisco River Valley is located in Northeast Brazil and stands out as an important fine wine produced region in the country, representing 15% of national production. The tropical semi-arid climate, with an annual average temperature of 26 °C and rainfall of 550 mm, concentrated from January to April, allows the production of grapes throughout the year, making possible to harvest two to three crops annually. The Spanish variety Tempranillo is being cultivated since just over 4 years ago and is already the second in importance among red vines in the region. Studies of different combinations of rootstocks and cultivar clones have allowed to identify better materials and to improve the quality and typicity of the tropical wines.

In this sense, this research aimed to evaluate the physical-chemical composition of tropical wines from Northeast of Brazil elaborated from two clones of Tempranillo variety, grafted on rootstocks IAC 313 (*Golia* x *Vitis caribae*) and 1103 Paulsen. The grapes were harvested in December 2010 in a partner winery and transported to the Laboratory of Enology at Embrapa Tropical Semi-Arid. Wines were elaborated by the traditional method and analyzed 30 days after bottling. The following parameters were evaluated: pH, total and volatile acidity, alcohol content, density, dry extract, free and total sulphur dioxide, total polyphenol index (I-280), tonality, colour and total anthocyanins. All tests were performed in triplicate and the results submitted to analysis of variance and Tukey test (P\_0.05) using SAS statistical software 9.0. Results showed that the rootstock influenced the levels of total polyphenol index and anthocyanins, which were significantly higher for both clones grafted on rootstock 1103 Paulsen, revealing the influence of the combination clone / rootstock on the physicochemical composition of the wines. Further studies are needed in order to determine what the phenolic and aroma compounds present in the Tempranillo wines of the region.

**Keywords:** *Vitis vinifera* L.; grapes; chemical compounds; polyphenols.