



## Influence of Rootstock on Chemical Characteristics of Syrah Wines from Northeast Brazil

Juliane Barreto de Oliveira<sup>1</sup>, Ana Júlia de Brito Araújo<sup>1</sup>, Gildeilza Gomes Silva<sup>1</sup>,  
Vanessa de Souza Oliveira<sup>1</sup>, Russaika Lírio Nascimento<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 São Francisco River Valley is the second region producing fine wines in Brazil. Many varieties are used to produce tropical red wines, but Syrah is the main grape because it adapted very well to the edafoclimatic conditions of the region. It's localized in a tropical semi-arid climate zone, very different as compared to the traditional winegrowing regions, situated in temperate zones in the world. The main difference is the absence of the dormancy period, because there isn't winter. The annual average temperature is 26°C, that allows to the vine to produce two or three times per year.

The aim of this study was to characterize the enological potential of Syrah wines elaborated by grapes harvested in November 2009 from vines grafted on two rootstocks, in Petrolina, Pernambuco State, Brazil. Grapes of Syrah clone 470 grafted on two rootstocks, IAC 313 (*Golia x Vitis caribaeae*) and 1103 Paulsen, were harvested at optimal maturity and wines were elaborated in triplicate. Potassium metabisulfite (5 g.hL<sup>-1</sup> de SO<sub>2</sub>) and yeast *Saccharomyces cerevisiae* (30 g.hL<sup>-1</sup>) were added. The winemaking was conducted by the traditional method with alcoholic and malolactic fermentations (25°C and 18°C, respectively) in 20L glass tanks (micro vinification). Wines were stabilized for 30 days at cold temperature (0°C), and then analyzed after sixty days of bottling. The wines were evaluated by physical-chemical and sensory analyses. The following parameters were analyzed: density, dry extract, alcohol content, total and volatile acidity, pH, colour, total anthocyanins content, total phenolic index, colour intensity and tonality. The sensory profiles of the wines were characterized by a descriptive panel of twelve trained judges that evaluated the wine samples in five repetitions using a non-structured 9 cm scale anchored in the left and right extremes with the terms "none/ weak" and "strong", respectively. The data were performed by ANOVA and Tukey test at 5% significance level, using the SAS statistical software. There was no significant difference (P<0.05) for density, total acidity and pH among the wines. The wines elaborated with Syrah grafted on the rootstock 1103 Paulsen (less vigorous) showed the highest anthocyanin content (487.33 mg.L<sup>-1</sup>), polyphenol index (50.2) and colour intensity. These wines were described by more intensity of the positive aromas for Syrah wines, like fruity, floral and empyreumatic aromas. Thus, it is possible to conclude that the use of rootstock influenced on the physical-chemical and sensory profiles of the Syrah wines evaluated. The rootstock 1103 Paulsen showed to produce better quality wines from Syrah clone 470.

**Keywords:** *Vitis vinifera* L.; wines; phenolic compounds; sensory analysis.