

VEGETATIVE DOSE HEIGHTS 'CABERNET SAUVIGNON' AND ITS INFLUENCE ON FRUIT AND WINE QUALITY

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Abstract:

Context and purpose of this study – The leaf area is of fundamental importance so that the plant can realize adequate levels of photosynthesis for the accumulation of reserves and to reach a suitable maturation of the berries. In this sense, the objective was to evaluate the effect of different lengths of the stalks from the first support wire, in the must and in the wine of 'Cabernet Sauvignon'.

Material and methods - The study was carried out by the Nucleus of Study, Research and Extension in Enology (NEPE²), of the Bachelor's Degree in Oenology of UNIPAMPA. The treatments were separated from the stalks at 60 cm (T1), 80 cm (T2), 100 cm (T3) and 120 cm (T4). The experiment was carried out in a vineyard located in the municipality of Dom Pedrito - RS, Brazil, during the 2015/16 crop, in 'Cabernet Sauvignon' grapevines at the age of 16, grafted on 'SO4' rootstocks and conducted in espalier. The experimental design was completely randomized blocks. The physicochemical analyzes of the must were Total Acidity - TA (g L⁻¹), pH e, Reducing Sugars (g L⁻¹). In the wine it was evaluated: Alcohol (% v/v), TA (g L⁻¹), Volatile Acidity (g L⁻¹), Glycerol (g L⁻¹), Anthocyanin (g L⁻¹), Color Intensity and Total Polyphenol Index (TPI). The data were submitted to the Tukey averages comparison test at 5% probability.

Results – Treatment T3 (vegetative canopy height of 100 cm) had the highest TA value (3.1 g L⁻¹). For the pH of the must, it decreased significantly as the canopy height increased. In wine, the alcohol content of the T4 treatment (120 cm) was the one with the highest value. In relation to the amount of anthocyanins, T1 treatment (60 cm) presented a higher amount of anthocyanins, T4 (120 cm), showed a color intensity, and a higher proportion of anthocyanins that give red tonality in the wine (520 nm) than the anthocyanins that give yellow tint in the wine (420 nm), thus the T4 (120 cm) was the treatment that showed the highest intensity of color, whereas the T3 (100 cm) was the one that presented less anthocyanins and color intensity. Preliminarily, it is concluded that maintaining the canopy of different sizes in the vegetative period has a significant influence on the quality of the must and wine of 'Cabernet Sauvignon' cultivated in the region of Dom Pedrito, RS, Brazil.

Key words: *Vitis vinifera* L., Carbohydrates, Photosynthesis, Viticulture.

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1. Introduction.



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Bacharelado em Enologia

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INTRODUCTION & OBJECTIVE

The leaf area is of fundamental importance so that the plant can realize adequate levels of photosynthesis for the accumulation of reserves and to reach a suitable maturation of the berries. In this sense, the objective was to evaluate the effect of different lengths of the stalks from the first support wire, in the must and in the wine of 'Cabernet Sauvignon'.

The objective of this work was to evaluate the control of the length of vines cv. Cabernet Sauvignon identifying the best size of branches for greater and better production of quality curls. This was carried out in a vineyard in the city of Dom Pedrito because it is located in the region of the Campanha whose potential vineyard was still little studied because it is a recent area. The experiment consisted in working with 4 treatments with heights of different branches.

MATERIAL & METHODS

The study was carried out by the Nucleus of Study, Research and Extension in Enology (NEPE²), of the Bachelor's Degree in Oenology of UNIPAMPA. The treatments were separated from the stalks at 60 cm (T1), 80 cm (T2), 100 cm (T3) and 120 cm (T4). The experiment was carried out in a vineyard located in the municipality of Dom Pedrito - RS, Brazil, during the 2015/16 crop, in 'Cabernet Sauvignon' grapevines at the age of 16, grafted on 'SO4' rootstocks and conducted in espalier. The experimental design was completely randomized blocks. The physicochemical analyzes of the must were Total Acidity - TA (g L⁻¹), pH e, Reducing Sugars (g L⁻¹). In the wine it was evaluated: Alcohol (% v/v), TA (g L⁻¹), Volatile Acidity (g L⁻¹), Glycerol (g L⁻¹), Anthocyanin (g L⁻¹), Color Intensity and Total Polyphenol Index (TPI). The data were submitted to the Tukey averages comparison test at 5% probability.

OPERATION CONDITIONS AND EXPERIMENTS

>The treatments were from the stalks at 60 cm (T1), 80 cm (T2), 100 cm (T3) and 120 cm (T4) and maintained during harvest (Figure 1).

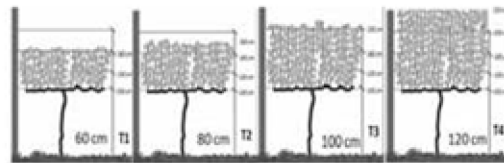


Figure 1 - Scheme of the experimental design. Adaptado de Brighenti et. al. (2010)

RESULTS & DISCUSSION

Treatment T3 (vegetative canopy height of 100 cm) had the highest TA value (3.1 g L⁻¹). For the pH of the must, it decreased significantly as the canopy height increased. In wine, the alcohol content of the T4 treatment (120 cm) was the one with the highest value. In relation to the amount of anthocyanins, T1 treatment (60 cm) presented a higher amount of anthocyanins, T4 (120 cm), showed a color intensity, and a higher proportion of anthocyanins that give red tonality in the wine (520 nm) than the anthocyanins that give yellow tint in the wine (420 nm), thus the T4 (120 cm) was the treatment that showed the highest intensity of color, whereas the T3 (100 cm) was the one that presented less anthocyanins and color intensity (Figures 2 and 3). Preliminarily, it is concluded that maintaining the canopy of different sizes in the vegetative period has a significant influence on the quality of the must and wine of 'Cabernet Sauvignon' cultivated in the region of Dom Pedrito, RS, Brazil.

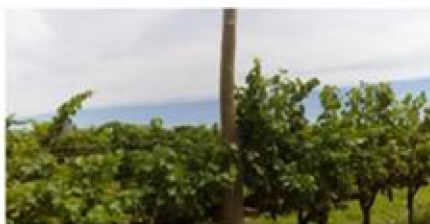


Figure 2 -Photos of the 2015/16 crop experiment.



Figure 3 -Photos of the 2015/16 crop experiment.

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