

Patrícia Coelho de Souza Leão

IMPROVEMENT OF COLOR OF CRIMSON SEEDLESS GRAPE BY PLANT REGULATORS IN THE SÃO FRANCISCO VALLEY, NORTHEAST BRAZIL.

Leão,PCS; Lima,MAC; Santos,FC; Trindade,DCG;

Embrapa Semiárido; Embrapa Semiárido; Embrapa Semiárido; Embrapa Semiárido;

This study aimed to improve the color of grape cv. Crimson Seedless in the São Francisco Valley, through the application of plant growth regulators. The experiment was conducted during two growing seasons in the years 2010 and 2011 in a commercial vineyard, in Petrolina, PE, Brazil. The treatments were represented by the control, ethephon (1 mL.L⁻¹) and abscisic acid (ABA) applied to a single concentration of 400 mg L⁻¹, in 2010, and two concentrations (400 and 600 mg.L⁻¹) in 2011. In both cases, concentrations were tested in three different ways: a) single application of 15 days before estimated harvesting (DBH); b) in two applications of half of the dose, first one 90 days after pruning (DAP) or during the berry softening and the second at 15 DBH, and c) in a single application at 90 DAP. The variables evaluated were: yield per plant, total number of bunches and color class as the percentage of uniform red berries, where 1 = 0-25%, 2 = 26-60%, 3 = 61-90% and 4 = 91-100%, bunch weight, berry size, skin color, measured by the attributes Luminosity (L), a* and b*; color index for red grapes, pulp firmness, elasticity of skin, soluble solids, sugars soluble content, titratable acidity, total extractable polyphenols, yellow flavonoids, anthocyanins and antioxidant activity. The experimental design was randomized blocks with four replications. There was no influence of ABA and ethephon application on yield, bunch weight and number of bunches. The number of bunches in classes 1 and 4, in 2010, and 1, 3 and 4, in 2011, differed significantly between treatments. In the 2010 season, the number of bunches in class 4 was higher in treatments with two applications of 200 mg L⁻¹ of ABA and one application of 400 mg.L⁻¹ of ABA at 90 DAP. In 2011 season, the application of ethephon resulted in a higher number of bunches in class 4, but did not differ from other treatments with ABA. The anthocyanins responded positively to ABA treatments in both growing seasons. In 2010, the content was higher at 400 mg.L⁻¹ of ABA applied at 15 DAC. In 2011 the better response was observed when it was applied 600 mg.L⁻¹ of ABA at 90 DBH, however not differed from treatments with ethephon and two applications of 300 mg.L⁻¹ of ABA. Furthermore, ABA increased soluble solids and total extractable polyphenols at 2010 season.