

**Title:** EFFECTS OF ABSCISIC ACID TREATMENT ON VITIS VINIFERA L. SAVVATIANO AND MOUCHTARO  
GRAPES AND WINE CHARACTERISTICS

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**Abstract:**

**Context and purpose of the Study-** . Grapes development is determined by grape cultivar and vineyard climatic conditions and consequently affecting the phenolic and aroma on grapes and wines. Absciscic Acid (ABA) plays a key role in the promotion of fruit ripening and fruit anthocyanin content. Herein, we report the impact of ABA to grape ripening and wine quality.

**Material and Methods** - Experiments were conducted during 2018 on *Vitis vinifera* L. Mouchtaro and Savvatiano grapevines at the Muses Estate winery (Muses Valley). All treatments were applied in triplicate in a randomized complete block design, with 25 vines for each replicate. Vines were sprayed with 0, 400 or 800 mg/L ABA aqueous solution at véraison, 3 and 6 days after the first application. Grapes were harvested at optimum sugar maturity and classical red and white winemaking procedures were followed. Standard analytical methods recommended by O.I.V. were used for grapes and wines (pH, alcoholic degree, total acidity, volatile acidity). Also, colour intensity, total phenolic compounds, tannin determination (Habertson et al., 2002; Sarneckis et al., 2006), browning test (Sioumis et al., 2006), and sensory analysis were performed.

**Results-** In both varieties, harvest was delayed in grapevines treated with ABA which is a highly promising result. According to the browning test, the lower value ( $k = 0.0024$ ) for the color change factor of Savvatiano wines was observed at 400 mg/L ABA. Higher  $k$  values, of 0.0031 and 0.0037, were recorded at control wine and at 800 mg/L ABA, respectively. Consequently, it seems that wines produced by grapes treated with 400 mg/L of ABA would develop brown color later than the other samples examined in this study.

Mouchtaro wines recorded the highest concentration of total anthocyanins (666- mg/L) for the wines produced by grapes treated with the highest ABA concentration. At the lower ABA concentration and the control the anthocyanins concentration was 640 and 568 mg/L, respectively. Wines were assayed for tannins according to BSA and MCP methods. Following the same trend, highest tannin concentration was observed at the highest ABA treatment (BSA: 9,40 mg/ L, and MCP :831 mg/L). Lower values of tannin concentration were recorded at the control wine (BSA: 6,98 & MCP :494 mg/L) and at the lowest ABA treatment (BSA: 6,42 & MCP: 609 mg/L ). Highest value of color intensity were scored by the wines receiving the highest ABA treatment (13,3) whereas, control and lower ABA concentration wines scored lower values (10,8 and 11,1). These preliminary results provide an insight into the effect of ABA on wine grapes, which is useful for grape quality.

**Key words:** Absisic Acid, *Vitis vinifera*, Mouchtaro, Savvatiano