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EFFECT OF SOME TREATMENTS ON GROWTH, BUD BEHAVIOR, YIELD AND BERRY QUALITY OF FLAME SEEDLESS GRAPEVINES UNDER SOUTH EGYPT CONDITIONS.

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ABSTRACT

A two - year trial was conducted during 2014/2015 and 2015/2016 seasons on 5-years old of Flame seedless grapevines, grown in sandy soil under drip irrigation system at Gohaina region, Sohag Governorate, Egypt. The selected grapevines of Flame seedless cv. were set as a randomized complete block design by using split-split plots with 3 replicates, the hydrogen cyanamide treatments (0, 3, 4 and 5 %) were arranged as main plot, whereas the application times (4th week of Dec., 1st week of Jan. or 2nd week of Jan.) were laid out as sub plots, and the Ethrel (400 ppm) and Kaolin treatments (4%) were laid out as sub sub plots. Obtained results showed that, the highest values of percentages of total carbohydrates, bud burst stand fruiting buds were achieved by 1st week of Jan. treated by H₂CN₂ at 5% followed by 1st week of Jan. treated by H₂CN₂ at 4% in both seasons. The lowest values of bud burst (days) and least period of bud burst (days) were achieved by 1st week of Jan. treated by H₂CN₂ at 5% and 1st week of Jan. treated by H₂CN₂ at 4% in both seasons. The lowest values of shot berries percentage was achieved by 1st week of Jan. treated by H₂CN₂ at 5% in both seasons. The highest values of leaf area (cm²), weight of pruning wood (kg), yield (kg/vine) and cluster weight (g) were achieved by 1st week of Jan. treated by H₂CN₂ at 5% in both seasons. The highest berries coloration (%), TSS/acid ratio and total anthocyanin absorbance at (A 520 nm) were obtained in 1st week of Jan. with H₂CN₂ at 5% treated with Ethrel treatment. Ethrel treatment was more sufficient for stimulating berries coloration (%), TSS/acid ratio and total anthocyanin absorbance at (A 520 nm) than Kaolin treatment. Kaolin treatment showed a noticeable increase in berry coloration (%) and total anthocyanin absorbance at (A 520 nm) after spraying as compared with that occurred in the control. This study suggested that 1st week of Jan. treated by H₂CN₂ at 5% with Ethrel treatment at veraison stage could be considered a useful technology for improve bud break, yield, berry quality and enhance coloration of Flame seedless grapevines or 1st week of Jan. treated by H₂CN₂ at 5% with Kaolin treatment at veraison stage to avoid the risk of negative quality effects being enhanced when Ethephon is used under South Egypt conditions.

Key words: Bud break, berry quality, Flame seedless, Ethrel, hydrogen cyanamide, Kaolin, shot berries, veraison stage and yield.