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# Effect of Nutrition on Yield and Sunburn in Apple (*Malus* × *domestica* Borkh.) cv. Red Delicious

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Inappropriate nutrition management and environmental stresses reduce the yield per unit area and increase some disruptions, especially sunburn in the apple fruit. Thus, the present study was conducted with aims i) improving the quality and quantity of 'Red Delicious' apple, ii) determining the best concentration of micro-elements liquid fertilizer (containing iron, zinc, and manganese), and iii) reducing or eliminating the risk of sunburn using nutrients (calcium and boron). In the first experiment, the effects of micro-elements liquid fertilizer (containing iron, zinc and manganese) on yield and fruit quality of 'Red Delicious' apple were examined. The results showed that fruit weight, fruit length, fruit width, TSS and fruit juicy were affected by treatments and there were significant differences between the treatments for these traits. Given that treatments 0.005, 0.004 and 0.003 had better effects than 0.002 and control, application of one of these three treatments is recommended at late-May. In the second experiment, the effects of different treatments of calcium and boron on sunburn and quantitative and qualitative traits of 'Red Delicious' apple at two times were investigated. Result showed that the $CaCl_2$ (1.00 %) and boron (0.002) at mid-May had the best effects on reducing sunburn and improving traits in the studied cultivar.

**Keywords:** Boron, Calcium, Disorder, Foliar application, Fruit quality, Micro-elements.

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