

P-139 (138)**EFFECT OF PRE-HARVEST ZINC SPRAY ON ENZYMATIC BROWNING AND FRUIT FLESH COLOR CHANGES IN TWO APPLE CULTIVARS**

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Apple flesh browning and enzymatic browning (EB) are important postharvest problems that can affect consumer attitude. In this study, the effect of pre-harvest zinc (Zn) spray on EB and fruit flesh color changes at harvest and after short period of storage time was investigated. Trees of apple (*Malus domestica* cultivar 'Delbarestival' and 'Kohanz') were sprayed with water (control), 0.13% of Oligo Zn-EDTA or 0.13% of Nano-Chelated Zn three or four weeks before harvest time. Total phenol, colorimetric measurements (ΔE), browning index (BI), polyphenol oxidase (PPO) and peroxidase (POD) activities in the fruit were measured at spray time, 3 and 4 weeks after spray time and also after 3 weeks of storage at 4 °C with 95% (RH). Treatments increased total phenolic concentrations and POD activity while, suppressed ΔE , BI and PPO activity of 'Delbarestival' and 'Kohanz' cultivars. These findings suggest that the pre-harvest spray with Zn can affect EB and fruit flesh color changes in apples.

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