

Application on the Texture and Quality of Red Apple in Semirom Region of Esfahan

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Due to the critical role of calcium in plant functions, especially in relation to the stability of cellular wall as well as cell membrane structure, this element is of vital importance in the shelf life of apple and in preventing physiological breakdowns of this fruit, such as its softening, turning mealy or developing bitter spots. An experiment was carried out in Semirom to study the effects of different concentrations of calcium chloride, as well as the times of foliar applications on calcium levels in this fruit and in the prevention of its different physiological breakdowns.

The experiment consisted of 28 uniform apple seedling stalks, treated with two, four, or six foliar sprays of calcium chloride at 0.5% and 1% concentrations. The experiment was based on a completely randomized block design with four replicates. Apples were sampled from all the treatments during the harvest and analyzed for firmness, TSS, pH, acidity, and nutrient content before storage. The remaining fruits were stored at standard temperature and humidity for 160 days. The stored apples were again sampled and analyzed for the mentioned parameters (except for nutrient content) at 45 day intervals.

The results indicated improved firmness due to foliar applications of calcium chloride, with the highest improvement being 11.5% above the control due to six foliar sprays of 1% calcium chloride. This improved firmness lasted up to 130 days of storage; however, no differences between