

**O-9 (106)****DISINFECTION EFFECT OF HYDROGEN PEROXIDE SOLUTIONS ON MICROBIAL GROWTH AND QUALITY FACTORS OF FRESH IN HULL PISTACHIO FRUITS (CV. JANDAGHI) UNDER MODIFIED ATMOSPHERE PACKAGING**

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This study was conducted to evaluate disinfection effect of hydrogen peroxide ( $H_2O_2$ ) as an organic alternative for sodium hypochlorite (NaOCl) on microbial growth and shelf-life of fresh pistachio fruits. A Complete Randomized Design (CRD) with seven treatments at three replications was considered for the experiment. Fruits were treated by spraying of  $H_2O_2$  and NaOCl solutions at concentrations of 1, 3 and 5% and  $H_2O$  was used as control. Then, fruits were packed in sealed polypropylene trays and stored at  $3\pm 1^\circ C$  for 30 days. At the end of storage, different quality factors, especially microbial growth, sensory quality, hull firmness, hull color indices and weight loss were measured. Analysis of variance of data collected from this experiment showed that the disinfectants had significant effect on microbial growth, weight loss, browning of fruits, chroma, lightness (L), hull firmness and sensorial quality. Although, no significant differences were observed in kernel firmness and hue angle. Results showed that  $H_2O_2$  controlled microbial growth effectively in comparison with NaOCl and  $H_2O$ . Spraying of fruits with 5%  $H_2O_2$  prior to storage, led to the lowest microbial growth (6.04 log CFU/g) and the  $H_2O$  as control treatment showed the highest microbial growth (7.27 log CFU/g). Fruits treated with 150 ppm NaOCl showed the highest weight loss and browning of fruits, 0.37% and 67.02%, respectively. In this experiment the lowest concentration of  $H_2O_2$  was more effective than highest concentration of NaOCl that is used as commercial sanitizer. According to the results 1%  $H_2O_2$  can be recommended as an organic alternative disinfectant to replace NaOCl for postharvest application in fresh pistachio.

**Keywords:** Microbial activity, Firmness, Fungi, Chroma, Hue angle.