Abstract

Three apple varieties 'Red Delicious', 'Golden Delicious', and 'Granny Smith', were treated at postharvest stage with different doses of calcium chloride (2 to 4%) alone or along with lecithin 1% through dip or injection method during 1996 and 1997. In 1997 in addition to all postharvest treatments, trees were sprayed with Nutrical (organic chelated solution 8%) at 1.25 l/a, for 6 times after fruit set at the 15 days interval. After postharvest treatment fruit were put in the cold storage at 1°C for 6 months. After each 2 months storage interval fruit were taken out from cold storage and put at room temperature for 15 days before study. In 1997 preharvest treatment along with postharvest treatments controlled mostly water core, bitter pit, rot, weight loss, reduced the acidity and pH as compared to 1996 when only postharvest treatments were applied. Water core and bitter pit were more reduced by $CaCl_2$ 4%+ lecithin 1% dip treatment. $CaCl_2$ 4%+ lecithin 1% dip and $CaCl_2$ 3% dip treatments kept fruit firm. Maximum Ca content was maintained by $CaCl_2$ 3% injection treatment during storage. Increase in SSC was achieved with $CaCl_2$ 4%+ lecithin 1% dip, $CaCl_2$ 4% dip and lecithin 1% treatments. Reduction in weight loss was found in, lecithin 1% dip, $CaCl_2$ 4%+ lecithin 1% dip, $CaCl_2$ 4% dip, $CaCl_2$ 2% injection and $CaCl_2$ 3% injection treatments. β-galactosidase activities was lowered by $CaCl_2$ 3% injection, $CaCl_2$ 4%+ lecithin 1% dip and lecithin 1% dip treatment. $CaCl_2$ 4%+ lecithin 1% dip and lecithin 1% dip treatments maintained higher acidity and lowered the pH in the treated apples during storage.