Abstract:

In this study, the effects of controlled atmosphere (CA) storage on scald development and postharvest quality of 'Granny Smith' apples (Malus domestica) grown in Antalya, Turkey, were investigated. The apples were harvested at optimal harvest time and stored in normal atmosphere (control) or in 1% CO_2+2% O_2; 2% CO_2+2% O_2 and 3% CO_2+2% O2 at 0 °C temperature and 90% relative humidity for 9 months. At certain intervals, samples were collected from each storage condition for physical and chemical analyses (e.g. weight loss, flesh firmness, amount of titratable acid, total soluble solids, skin color, scald development and decayed fruit). The percentage of scald was significantly lower in CA-stored apples than in those stored in normal atmosphere. Apples subjected to CA were firmer and had substantially higher level of titratable acids and soluble solids than apples stored in normal atmosphere. CA-storage delayed the loss of chlorophyll and yellowing of the skin and also reduced incidence of decay. Flesh firmness, soluble solids, titratable acids, skin color and amounts of decay were not different at the three tested CA concentration levels. No fruit injury or off-flavor production resulted from CA-storage.