Abstract:

Tree-ripe ‘Irwin’ Mangoes grown under greenhouses in Japan have excellent quality. Unfortunately, their harvesting period is very limited and storability is very poor. Therefore, a method for preserving the fruit quality is highly required. Temperature and gas composition are the most important factors affecting the rate of respiration and ultimately the fruit quality attributes. Respiration rate is the necessary parameter for designing the storage conditions. In the present investigation, the effects of storage temperature (5, 15, or 25 °C) and gas composition on the O_2 consumption and the CO_2 production have been studied by using the flow through system. The ratios of the respiration rate under controlled atmosphere conditions (1.6 to 20.7 % O_2, 0.2 to 10.2 % CO_2, balanced with N_2) were calculated against the values under normal air condition. Data obtained on respiration rate and respiration quotient suggest that low temperature in combination with CA gas composition around 10 % CO_2 and 5 % O_2 will be effective to suppress the respiration rate of tree-ripe ‘Irwin’ mango.