Abstract:

We evaluated the efficacy of atmospheric modification in controlling decay and maintaining quality of 'Wonderful' pomegranates kept at 5oC, 7.5°C or 10°C during the 1997-8 season using air, 2kPa O_2, air + 10kPa CO_2, and 2kPa O_2 + 10kPa CO_2. During the 1998-9 season we tested the following atmospheres at 5°C and 7.5°C: air, 5kPa O_2, air + 10kPa CO_2, air + 15kPa CO_2, 5kPa O_2 + 10kPa CO_2, 5kPa O_2 + 15kPa CO_2. We found that it is possible to store pomegranates at 7.5°C in 5 kPa O_2 + 15 kPa CO_2 for up to 5 months, provided that the level of latent fungal infections at the time of harvest is low and that the pomegranates are sorted carefully after harvest to store only fruits that are free from defects and decay. CO_2-enriched atmospheres resulted in higher concentrations of acetaldehyde, ethanol, and ethyl acetate, especially after 4 and 5 months of storage. Accumulation of these volatiles was greater at 7.5oC than at 5oC, but in both cases the highest concentrations were below the threshold values for detection of off-flavors.