

Abstract:

Export of Chilean cherries to the Japanese market has been just authorized provided fruit is fumigated with methyl bromide to eliminate potential fruit infestation with codling moth. Research in the 2000/2001 season was carried out at INIA to find controlled atmosphere (CA) treatments that could alleviate negative effects of the fumigation procedure. Quality losses caused by fumigation treatment were defined. Furthermore, fumigated and non-fumigated Bing cherries were subjected to different combinations of CO₂/O₂ in 2 separate trials using an automated system (Kronenberger Systemtechnik, Germany). Levels of CO₂ ranged from 0 to 30 kPa combined with O₂ at levels between 0 and 21 kPa. Fruit were cold stored with periodic evaluations being performed directly after cold storage and after 2 days of shelf life at 20°C. Fruit color, firmness, respiration rate, incidence of disorders and decay were measured. Fumigation with methyl bromide negatively affected fruit and stem appearance. Despite the ample range of gas levels assayed, CA treatments were not able to markedly influence quality aspects with the exception of decay being significantly reduced. However, fruit showed a remarkable tolerance towards high CO₂ and moderate low O₂ levels.