

Title The effect of pressurized CA (Controlled Atmosphere) treatment on the storage qualities of peach

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Abstract

There are some post-harvest problems in distributions of peaches because the peaches are cultivated at high temperature seasons in South Korea. The peach flesh is progressed soften rapidly at that season. Also, low temperature conditions below 10 degree are not suitable for storage of peaches because of chilling injury. According to other study, high concentration carbon dioxide treatments for 24-48 hours are effective to extend shelf-life of peaches. If carbon dioxide treatment is conducted under the high pressure conditions, the solubility of gas will be increase by Henry's law. Therefore, it is expected that pressurized controlled atmosphere conditions will be effective to elevate effectiveness of carbon dioxide treatment and save treatment time. This study was conducted to investigate effectiveness of pressurized CA (Controlled Atmosphere) treatment about storage qualities of peach during cold storage. Two kinds of peach varieties were used as experimental materials, one is 'Yumyung' and another is 'Changhowon' both varieties were cultivated in South Korea. The Pressurized CA treatment was conducted as pre-treatment for cold storage of peaches using mixed gas (6%O₂ and 18%CO₂) from 0 kPa to 294.2 kPa. After pressurized CA treatment, peaches were stored at 7 and 10°C according to temperature tolerance of peach variety. The storage qualities of peaches were measured periodically. On the storage quality of 'Yumyung' peach, 2.1-2.6% weight loss was observed in treated and control samples, preservation ratio of flesh firmness of treated peaches was shown 60% of the initial flesh firmness after 3 weeks otherwise that of control sample was 37.4% of the initial flesh firmness. The weight loss of treated peaches was lower than that of control peaches in spite of vacuum treatment to replace internal gas of chamber in 'Changhowon' peach. Also, highest preservation ratio of flesh firmness was observed in treated peaches compared to control peaches. On the soluble solids contents and titratable acidity, no significant differences were found between control and treated peaches in the both varieties. In these results, pressurized CA treatment was effective to maintain flesh firmness in both peach varieties as pre treatment for cold storage. The other factors of storage quality, weight loss, soluble solid contents and titratable acidity, were not affected by pressurized CA treatment.