Thesis Title	The Effect of Carbon Dioxide Shock Treatment and Packages on Qualities and Shelf Life of Peas (*Pisum sativum* L. var. *macrocarpon*)
Thesis Credits	12
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Degree of Study	Master of Science
Department	Postharvest Technology
Academic Year	1999

Abstract

Effect of carbon dioxide shock treatment and packages on quality and shelf life of peas (*Pisum sativum* L. var. *macrocarpon*) were investigated. The peas were performed at 3 different concentrations of carbon dioxide, 0.03 (control), 40 and 80 %, at different time for 3, 6 and 9 hours and then stored at 10 °C and 86 % RH. For overall acceptance, the results showed that the trained consumers accepted the peas treated with 40 % carbon dioxide at 9 hours in higher score than other treatments. The results were found that carbon dioxide shock treatment at 40 % carbon dioxide can reduce weight loss, chlorophyll degradation, and less total sugar lost. The shelf life can be extended to 8 days. For the effect of package on quality changes and shelf life of peas, the storage experiments were conducted and showed that peas packed in foam trays and wrapped with LLDPE or PVC films had a comparable of unwrapped fruits. Peas packed in 8, 18 or 32 holes of perforated polypropylene bags is comparable with no holes of perforated polypropylene bags. The results showed that peas packed in foam tray and unwrapped with films had rapidly wilting and high weight loss, caused to shelf life of 4 days. While peas packed in foam tray and wrapped with plastic films reduced respiration rate, weight loss, maintained humidity in package and delayed chlorophyll degradation. Peas packed in foam tray and wrapped with PVC films resulted to better appearance and better overall acceptability than wrapped with LLDPE films and extending shelf life of 8 days, while peas packed in foam tray and wrapped with LLDPE films, had extending shelf life of 6 days. While peas packed in 18

and 32 holes of perforated polypropylene bags had a comparable shelf life of 8 days shorter than that of 8 holes and no hole of perforated polypropylene bags and had wilting effect. All fruits packed in 8 holes and no hole of polypropylene bags reduced respiration rate, weight loss, delayed total sugar loss and shelf life of 10 days. However peas packed in no hole of perforated polypropylene bags had off odor and flavor.

Keywords : Peas / Carbon dioxide shock treatment / Plastic film / Package