

Title Active modified atmosphere packaging using ZP ageless to control cut surface browning of peeled onion

Author Zaulia O., Azhar M. N., Razali M., Nur Aida M. P., Bizura Hasida M. R., Habsah M., Hairiyah M., Rohaya M. A., Zaipun M. Z., Tham S. L.

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Abstract

Packed peeled onion is a new market trend commercialized product in supermarket and hypermarket, and can be introduced for food retail store and food services such as restaurants, hotels, food institutions and food industries. The problem of peeled onion during storage is normally caused by growth of roots, sprouts and fungus, drying and browning of the cut surface, development of unpleasant and strong smell and discolouration. This study was carried out to investigate the combined effect of water and oxygen absorber on quality and shelflife of peeled onion in bulk packaging. Peeled onion packed in corrugated fiber board (CFB) box lined with low density polyethylene (LDPE) of 0.04 mm containing water absorber (Supasorb) alone served as control and in combination with oxygen absorber (ZP Ageless 100) as treatment. Packed peeled onions were stored at 2°C and quality evaluations were carried out at weekly intervals for 8 weeks. Quality assessment showed that oxygen absorber increased discolouration, texture loss, CO₂ production of peeled onion during storage. Oxygen absorber caused an increase in ethylene production at the end of storage (week 7). Total titratable acidity (TTA) was reduced by O₂ absorber after 3 - 4 weeks of storage. Oxygen absorber hastened changes in ascorbic acid and total soluble solids (TSS) and fungal growth during storage. There were no significant difference on the effect of O₂ absorber in packaging on O₂ concentration in packaging, pH, and lightness (*L*). Advantages of oxygen absorber in package as active modified atmosphere to preserve peeled onion were the delay of rooting and sprouting, and reduction of yellowing on cut surface during 8 weeks storage at 2°C.