

Title Influence of nanosilver packaging on quality retention of peeled garlic

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Abstract

The effect of nanosilver packaging on quality of peeled garlic stored at 2°C was determined. Five difference packaging for this experiment which are polypropylene container contain 1 % nanosilver with nanosilver cap (PPCN), polypropylene container contain 1 % nanosilver with cap without nanosilver (PPN), polypropylene container and cap without nanosilver (PP), low density polyethylene coating with nanosilver (LDPE-N) and low density polyethylene without nanosilver as control for LDPE plastic bag (LDPE). Nanosilver was found significantly affect the quality of peeled garlic. Firmness was maintain the highest in PP contain nanosilver with cap contain nanosilver (PPCN). Advantages of nanosilver in PPCN were development of better MAP with significantly reduced O₂ and significantly increased CO₂ in container, significantly reduced browning and acidity (reduced ITA, increased pH) of garlic. Between all PP packaging studies, PP container contain nanosilver with cap nanosilver (PPCN) was the best packaging which can extend the shelflife and freshness of the peeled garlic for 4 weeks. Nanosilver accelerated rooting and cut surface browning which is significantly lower in PPN compared to PP. Nanosilver in PE bag significantly reduced ethylene in package. Disadvantage of nanosilver in LDPE bag is, it reduced ascorbic acid of peeled garlic. Nanosilver in LDPE and PP had no significant effect on TSS, lightness. The best packaging to maintain hue and ascorbic acid content of garlic is LDPE bag without nanosilver. Peeled garlic can be stored for 8 weeks in LDPE and LDPE nanosilver with less surface browning, rooting and sprouting as compared to PP.