Title Effect of storage temperature on the quality of MA-packed baby leaf salads

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Citation Abstracts of 7th International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

Keywords *Lactuca* sp.; *Brassica* sp.; MAP; storage loss; chlorophyll; nitrates; soluble solids; ascorbic acid; microbiological quality

Abstract

The aim was to determine the effect of storage temperature on the postharvest quality of different baby leaf salads. Lettuce 'Lollo Bionda' and, Redbat' , Japanese greens *Brassica juncea* subsp. *juncea* 'Red Giant' and *Brassica rapa*. var. *japonica* 'Green Mizuna' were grown hydroponically in greenhouse NFT-system. 50 g of each cultivar was weighed into PET punnet and packed into 25-µm OPP with flow-pack machine. Following storage temperature regimes were used: T1 - packages held at +8.5°C for 4 days followed by +4 °C for 10 days; T2 - at +4 °C for 14 days. O_2 and CO_2 content from the packages was monitored daily using handheld O_2/CO_2 gas analyser OXYBABY V. Storage loss was determined by weighing the packages before and after storage. At the end of the experiment sensory quality (appearance, taste, smell and off-flavour) was assessed in 5-point scale. The content of chlorophyll a and b, total carotenoids, nitrates, soluble solids, leaf colour and microbiological quality was determined at harvest and after storage. To analyse microbiological quality of the stored products, standard enumeration methods were used and total aerobic mesophilic bacteria, coliform bacteria, yeasts and moulds were counted. Generally, the oxygen content decreased and CO_2 content increased more in T1 regime compared to T2 regime. Weight loss of salad crops was greater in Tl regime, being greatest in 'Red Giant' (2.6%). Based on the sensory analysis results, lettuce 'Lollo Bionda' and 'Redbat' had better postharvest performance having highest taste and appearance scores after storage. All crops preserved better appearance in T2 regime. Content of soluble solids, chlorophylls and carotenoids decreased during storage in lettuce crops, but increased in Japanese greens. Number of total aerobic mesophilic bacteria increased during storage in all crops, but differences between temperature regimes were not significant. Temperature regimes did not have significant influence on the growth of coliforms, yeasts and moulds in MA-packed salad crops.