Title Effect of packaging material and different storage regimes on shelf life of green hot pepper fruits

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Abstract

Two hot pepper hybrids; Wonder King and P-6 grown under high plastic tunnels. A study was conducted to determine the best polyethylene packaging material and low temperature treatment to maximize the shelf life of green hot peppers using a two factorial trial (temperature and packaging material) with a completely randomized design. Freshly harvested fruits were stored at a range of temperatures; 7°C, 14°C and 21°C in a range of packaging; 7 μm, 15 μm and 21 μm thick polyethylene bags or open. Post harvest quality parameters were assessed. Minimum weight loss for P-6 was observed for fruits stored at 7°C in 7 μm thick polyethylene bags, whereas for Wonder King minimum weight loss was for fruits stored at 7°C in 2l μm thick polyethylene bags. Maximum ascorbic acid in P-6 was 53 mg/100 ml when stored at 14°C packed in 15 μm thick polyethylene bags whereas in the case of Wonder King maximum ascorbic acid was 107 mg/100 ml at 7°C with 7 μm thick polyethylene bags. Total phenolic compounds were 53.62 mg/100 g for P-6 when stored at 7°C unpacked while no significant differences were found in Wonder King. No significant carotenoid differences were recorded for P-6 whereas maximum total carotenoids (5.93 mg/100 g) were found for fruits stored at 7°C with 7 μm thick polyethylene bags. Total sugars, reducing sugars and non reducing sugars in P-6 were estimated at 9.16%, 2.71% and 2.59% whereas in the case of Wonder King 6.53%, 1.37% and 1.27% at 21°C in open conditions, respectively. Maximum shelf life (20 days) was recorded for P-6 at 7°C in 15 μm thick polyethylene bags while in Wonder King maximum shelf life was 10 days at 7°C using 15 m thick polyethylene bags.