

Title Packaging technology influence on the shelf life extension of fresh raspberries

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Abstract

Raspberries have been classified as a non-climacteric fruits - they have high physiological post-harvest activity, short ripening and a senescence period. The objective of this study was to examine the possibility of shelf life extension of primocane raspbeery, cultivar 'Polana' by packaging in different materials. The experiments were performed in Latvia University of Agriculture Faculty of Food technology, Jelgava and in Latvia State Institute of Fruit Growing, Dobeles during the year 2007 and 2008. Contents of ascorbic acid, anthocyanins, color in L*a*b measuring system, changes of moisture content and pH were analyzed during the storage period of three weeks. Oxygen and carbon dioxide dynamics in hermetic packages were analyzed by gas analyzer. The effect of packaging materials for shelf life extension was determined by using different packages: PP (polypropylene) trays (210x148x35 mm) inserted in pouches made from PLA (polylactic acid) films by different thickness 25 and 40 µm; cardboard boxes (145x120x80 mm) placed in PLA film pouches by different thickness 25 and 40. PP boxes (180x110x80 mm) manufactured with holes (total area of holes 14.3 cm²) and cardboard boxes covered with net were used as control packaging in the experiments. All samples were stored in alight "Commercial Freezer/Cooler ELCOLD" at temperature $+4 \pm 1$ °C and two control samples were placed at room temperature ($+20 \pm 2$ °C). The content of vitamin C rapidly increased during the first two days of storage in samples of all packaging materials but after four days ascorbic acid content started to decrease. Similar tendencies were detected in data of raspberry anthocyanin content after two days of storage, but after four days it still continued to increase. The maximal weight losses after 6 to 14 days storage were 5.3% (12g). The highest weight losses were to samples packed in cardboard boxes (145x 120x80 mm) which were placed in PLA film pouches by thickness 25 µm.