The assessment of apple shelf life after storage at modified atmosphere

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Abstract

Fresh fruit definitely go together with healthy food. In order to preserve the quality of fruits it is essential to choose the most suitable storage technology. One of the most widely used is modified atmosphere packing which only minimally affecting fresh fruit quality, can preserve them for up to one year. Nevertheless it is also very important to maintain the quality, of fruits during a shelf life period after preservation. To acquire that precisely defined ratio of gases is crucial, if not obeyed shelf life of the fruit will significantly decrease. During preservation fruit quality attributes are physical and biochemical properties, and ripening index. Four apple cultivars grown in Latvia have been used in the research (‘Gita’, ‘Auksis’, ‘Saltanat’, ‘Orlik’), apples were preserved in modified atmosphere for five months, after that two weeks of shelf life period in retail (supermarket, T=18°C). According to biochemical attributes at the end of the shelf life period the amount of dry matter has significantly increased, other physical and biochemical attributes like density and quantity of acids have decreased. During shelf life period apples of the cultivar ‘Gita’ rotted the most (60%) and lost weight (8%) which can be explained with using inappropriate gas mixture. The best gas combination was O_2 = 1.50%, CO_2 = 2.50% used with cultivars ‘Auksis’ and ‘Orlik’, turned out that unmodified atmosphere had more beneficial effect on other cultivars ‘Gita’ and ‘Saltanat’.