Title	Role of yeast proliferation in the quality degradation of strawberries during refrigerated storage
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Citation	International Journal of Food Microbiology, Volume 108, Issue 1, 15 April 2006, Pages 42-50
Keywords	Quality degradation; Strawberries; Microbiology; Physiology; Storage

Abstract

Quality changes of strawberries during storage can be caused both by microbiological and physiological processes. There is little known about the possible contribution of microbiological processes to the quality degradation of strawberries. In this study, quality of strawberries during storage was evaluated by analytical and sensorial analyses. It was the aim to investigate the influence of microbiological activity on the changes of different quality factors of strawberries during storage.

During storage at 7 °C, quality was mainly determined by the odor and by visual defects. Regarding the odor, highly microbiologically contaminated late-season strawberries packaged in air at 7 °C became sensorially unacceptable due to the presence of high amounts of ethyl acetate. This could be attributed to the yeast proliferation: at yeast concentrations above 5.0 log cfu/g, an increase in ethanol was detected in the headspace of the strawberries. It was shown that ethanol was converted to ethyl acetate by strawberries resulting in an unacceptable odor. In an experiment with low microbiologically contaminated early-season strawberries, not reaching the above mentioned yeast counts, less ethyl acetate was detected which resulted in strawberries that were sensorially acceptable during the whole storage period (12 days).

Strawberries packaged in modified atmosphere conditions showed a different quality pattern due to the effect of decreased O_2-concentrations on both microbiological and physiological processes. This paper demonstrates that also microbiological processes on strawberries should be considered as they could play an important role in the sensorial quality when interacting with physiological processes.