

Abstract:

Different possibilities (combination of gas composition and packaging film) of consumer-size modified atmosphere packages for highly perishable strawberries and raspberries, stored at 7°C, were evaluated. All proposed closed packaging systems resulted in a prolonged shelf life compared to the nowadays applied macro-perforated packaging films. A selective permeable film was selected based on the required oxygen and ethylene permeability in order to obtain 3-5% O₂, 5-10% CO₂ and a limited ethylene accumulation. High Oxygen Atmosphere (HOA) (95% O₂ – 5% N₂) in combination with a high barrier film for strawberries and a semi-barrier film for raspberries resulted in too high CO₂-levels resulting in poorer evaluation of the organoleptical properties (fermentation and softening) but an inhibition of mould development was noticed. The combination of a HOA in a selective permeable type of packaging film was evaluated as an optimal packaging system based on the checked quality assessment parameters: moisture loss, loss of marketable fruit based on visual defects and mould development, sensorial and microbiological quality. For raspberries, the addition of an ethylene adsorbing film in the system is favourable to prevent a too high accumulation of ethylene.