

**Title** Influence of postharvest treatments and film permeability on quality decay kinetics of minimally processed grapes

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#### Abstract

The influence of both postharvest treatments and film permeability on the quality decay kinetics of freshly processed grapes was addressed. Ethanol, chlorinated water and hot water were tested to reduce microbiological spoilage. The treated grapes were packaged in two polyester-based biodegradable films (NVT1 and NVT2) and the composition of the atmosphere within the packages determined. A multilayer film, made by laminating an aluminium foil with a polyethylene film (aluminium) was used to evaluate separately the respiratory activity of the packed grapes, and the oxygen and carbon dioxide permeability coefficients of the investigated films under real working conditions. The quality decay kinetics of freshly processed table grapes packed at 5 °C were assessed by monitoring the cell load of the main spoilage microorganisms (total mesophilic viable count, lactic acid bacteria, yeasts and moulds) and the product appearance for a period of about 30 days. Results suggest that ethanol was the most efficient treatment, as it successfully reduced the cell load of the spoilage microorganisms without affecting respiration of the packed food or its appearance. Differences between the investigated biodegradable films were not statistically significant.