

The effect of packaging and storage temperatures on the shelf-life of minimally processed cauliflowers

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Abstract

Minimal processing is one of the promising technology inventions to anticipate social dynamic of the vegetable consumers in meeting their needs for fast, simple, and safe food. However the wound caused by minimally processed can speed up the damage in vegetables. The objectives of this study were to find out the effect of packaging and storage temperatures on the shelf-life of minimally processed cauliflower (MPC). The experiment used a split plot design with three replications. The main plot consisted of four storage temperatures levels, i.e., 0, 5, 10°C, and ambient temperature ($21\pm 2^\circ\text{C}$). The sub-plot consisted of three types of packaging, i.e., polyethylene (PE) film without perforation, PE film with perforation of 1% and control without packaging. Determination of the cauliflower shelf-life was based on the critical of L value (78.51). The results showed that the perforated PE packaging film produced MPC with 1.5-3 times longer shelf-life than the other treatments for all levels of storage temperature. Lower storage temperature made the shelf-life of the cauliflower longer. The longest shelf-life of MPC was provided by the perforated PE packaging film and storage temperature of 0°C in 54.22 days, while the shortest one (1.84 days) was performed by the PE film without perforations stored at the ambient temperature.