

**Title** Use of biodegradable films for prolonging the shelf life of minimally processed lettuce  
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#### **Abstract**

The ability of biodegradable films to prolong the shelf life of minimally process lettuce stored at 4 °C was addressed. Four different films were tested: two polyester-based biodegradable films (NVT1, NVT2), a multilayer film made by laminating an aluminum foil with a polyethylene film (All-PE), and an oriented polypropylene film (OPP). Package headspace, microbial load and colour of the packed lettuce were monitored for a period of 9 days. A simple mathematical model was used to calculate the *senescence level*, whereas the re-parameterized Gompertz equation was used to calculate microbial shelf life of the fresh product. The fastest quality decay kinetic was observed for the lettuce packed in OPP, whereas the slowest one was detected for that in All-PE. Results suggest that the gas permeability of the investigated films plays a major role in determining the quality of the packed produce. Moreover, it was observed that biodegradable films guarantee a shelf life longer than that of OPP.