

Title Failure criteria based on consumers' rejection to determine the sensory shelf life of minimally processed lettuce

Author Gastón Ares, Inés Martínez, Claudia Lareo and Patricia Lema

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Abstract

The aims of the present work were to determine failure criteria based on consumers' rejection to purchase for shelf life estimation of minimally processed lettuce, and to compare criteria for whole and cut lettuce. A trained sensory panel and a consumer panel evaluated samples of whole and cut lettuce leaves packaged in passive modified atmosphere. In order to determine failure criteria to estimate sensory shelf lives, sensory attribute intensities corresponding to 25% consumers' rejection to purchase percentage were calculated using logistic regressions. Failure criteria values were lower for cut lettuce than for whole leaves for all the evaluated attributes, suggesting that consumers reacted differently towards whole and cut lettuce leaves, being stricter towards cut lettuce than towards whole lettuce leaves. These results indicate that sensory limits depended on the product considered and therefore a unique criterion should not be used to estimate the shelf life of both cut lettuce and whole lettuce leaves. Twenty-five percent of the consumers would refuse to purchase cut lettuce if the intensity of the evaluated defects was over 10% of the measuring scale, whereas scores of 25% of the scale were needed to achieve a 25% of consumer rejection in the case of whole leaves. These failure criteria were stricter than those traditionally used for sensory shelf life estimation of minimally processed lettuce, which might assure the products' quality at the end of its shelf life.

Results of the present study showed the importance of performing consumer studies in order to establish proper criteria to estimate the shelf life of fresh vegetables.