

Title Effect of light and packaging on shelf-life of fresh-cut sweet basil (*Ocimum basilicum*) and rosemary (*Rosmarinus officinalis*)

Author R.J. Anderson, J.P. Bower and I. Bertling

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Abstract

The sale of fresh-cut herbs is often adversely affected by poor storage life, even when using low temperature storage and modified atmosphere packaging. The objective of this study was to investigate the role of different forms of packaging and storage conditions in determining the optimal environment for storage and marketing of fresh-cut herbs. Rosemary and sweet basil were placed into micro-perforated packages, which control water loss but allows maintenance of normal atmosphere in the package. Micro-perforated and non-perforated polypropylene bags were used, with normal and modified atmospheres applied to the non-perforated bags. Rosemary was stored at 1°C for 21 days and basil for 9 days at 12°C. Packages were stored with and without light. Product condition was evaluated visually, the aroma tested organoleptically, and respiration rate and CO₂ concentration in the packages determined. Storage of herbs under light significantly decreased the CO₂ content of bags, and maintained herb aroma. The use of modified atmosphere appeared unwarranted as the best overall quality of both herbs was maintained using micro-perforated bags. High or uncontrolled increases in CO₂ concentrations in the bags resulted in leaf degradation and, hence, loss of colour and aroma, and in the development of blemishes. It is thus suggested that, for both herbs, micro-perforated polypropylene packaging be used, and packs should be stored and displayed in a light environment.