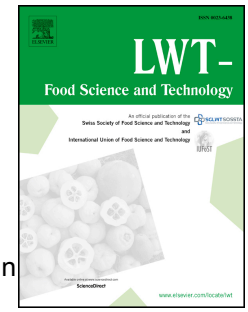
Accepted Manuscript



Design and application of a passive modified atmosphere packaging for maintaining the freshness of Chinese cabbage

Da Yang, Dongli Li, Wencai Xu, Ruijuan Liao, Jiazi Shi, Yabo Fu, Jigang Wang, Yajun Wang, Xiaohui He

PII: S0023-6438(18)30342-6

DOI: 10.1016/j.lwt.2018.04.036

Reference: YFSTL 7047

To appear in: *LWT - Food Science and Technology*

Received Date: 23 November 2017

Revised Date: 10 April 2018

Accepted Date: 13 April 2018

Please cite this article as: Yang, D., Li, D., Xu, W., Liao, R., Shi, J., Fu, Y., Wang, J., Wang, Y., He, X., Design and application of a passive modified atmosphere packaging for maintaining the freshness of Chinese cabbage, *LWT - Food Science and Technology* (2018), doi: 10.1016/j.lwt.2018.04.036.

Design and application of a passive modified atmosphere packaging for maintaining the freshness of Chinese cabbage

DaYang; Dongli Li*; Wencai Xu; Ruijuan Liao; Jiazi Shi; Yabo Fu; Jigang Wang; Yajun Wang; Xiaohui He

Beijing Key Laboratory of Printing and Packaging Materials and Technology, Beijing Institute of Graphic Communication, Beijing 102600, China

Abstract

We designed two types of passive modified atmosphere packaging (PMAP) on the basis of mult-piece films integration design using films A (films with high water vapor transmission rate) and E (films with high oxygen transmission rate (OTR) and high carbon dioxide transmission rate) as raw materials. The two types of PMAP were evaluated for their influence on headspace gas in packaging and appearance quality, vitamin C, soluble solid content, and water loss in Chinese cabbage (*Brassica rapa*). Results show that PMAP can effectively delay the respiration of Chinese cabbage, thereby reducing nutrient loss, maintaining appearance quality, avoiding fog, and extending storage time from two to five days at room temperature.

Keywords: Chinese cabbage; passive modified atmosphere packaging; multi-piece films integration design; high water vapor transmission rates

1 Introduction[1]

Chinese cabbage is a variant of a cabbage subspecies of the species *Brassica rapa* under the genus *Brassica* of the family *Brassicaceae*. Chinese cabbage is also called green vegetable and little cabbage. The history of Chinese cabbage in China has been extensive. This vegetable is

*Corresponding author.
E-mail address: lidongli6666@126.com