

Title Effect of film packaging in extending shelf life of dragon fruit, *Hylocereus polyrhizus*

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Citation Book of Abstracts, Southeast Asia Symposium Quality and Safety of Fresh and Fresh Cut Produce Greater Mekong Subregion Conference on Postharvest Quality Management in Chains, August 3-5, 2009, Radisson Hotel, Bangkok, Thailand.

Keyword dragon fruit; shelf life; film packaging

Abstract

Dragon fruit (*Hylocereus polyrhizus*) a type of climbing cacti has been developed as exotic fruit crop due to its highly nutritional value. This fruit which is also known as red pitaya in Latin America is enclosed by red peel while the red pulp is embedded with small black seeds. However the fruit has limited shelf life in the presence of normal air by two means; the physicochemical effect of atmospheric oxygen and the aerobic microbial growth. These factors either solely or in association with one another cause changes in colour, texture, flavour that eventually lead to postharvest fruit quality deterioration. Nevertheless, extending the shelf life of many fresh fruit has been made possible by the usage of modified atmosphere packaging. This is because packaging can affect atmospheric conditions within a fresh fruit so as to extend the shelf life by slowing down the respiration rate that influences the physiological and biochemical properties. Generally, modified atmosphere packaging utilizes polymeric films with different permeabilities for O₂, CO₂, other gases, and H₂O to create a modified atmosphere around the packaged fruit. Benefits of film packaging other than creation of modified atmosphere can include maintenance of high relative humidity, reduction of water loss, reducing contamination during handling and thus maintain the postharvest fruit quality. Furthermore, interest has been shown in the use of plastic films mainly polyethylene with various thickness for modified atmosphere packaging. In this study, different packaging films vary in their permeabilities for CO₂ and O₂ are to be used to investigate the effects on fruit quality attributes of dragon fruit, *Hylocereus polyrhizus*.