

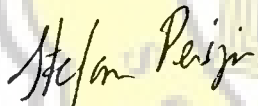
**THE INFLUENCE OF STORAGE TEMPERATURE AND
PACKAGING MATERIALS ON THE SHELF LIFE OF CAISIN
(*Brassica rapa* L. cv. *Group Caisin*)**

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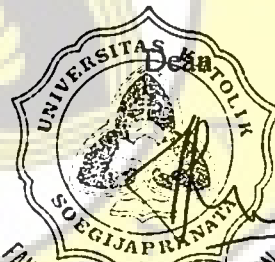
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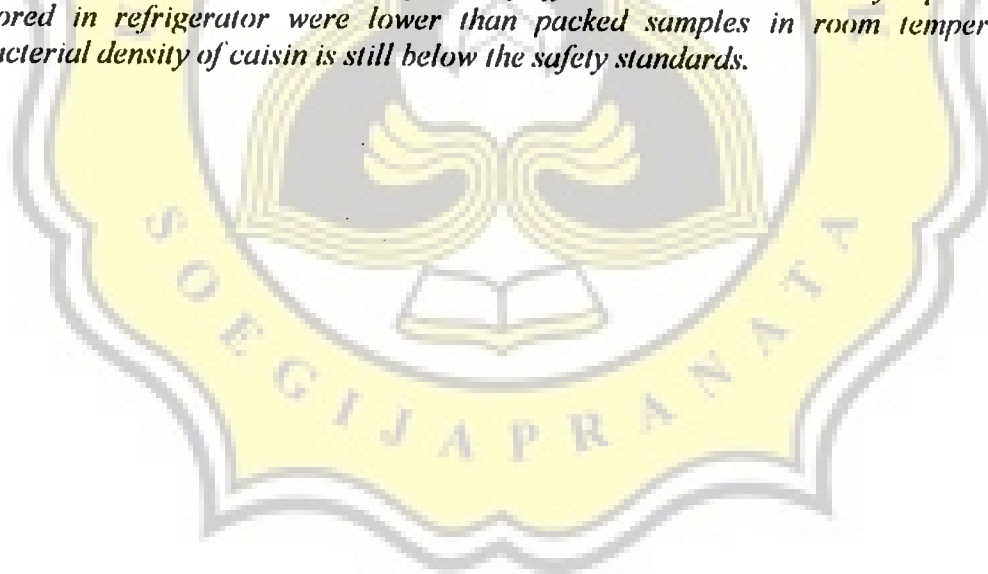
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Summary

Caisin (Brassica rapa L. cv. Group Caisin) is a very perishable kind of leafy vegetables. Its shelf life is only 1-2 days. A bad handling process after harvest is the main cause of post harvest losses. Therefore, a good post harvest handling is essential to extend the shelf life. Market access is largely determined by the shelf life of the product. The objectives of this study are to know the influence of packaging and storage temperature on the shelf life of caisin. Caisin for this research was taken from Tahun Cundi village, Ambarawa district. Caisin were packaged in different plastics (polypropylene (PP) 15 μm and 30 μm ; polyethylene (PE) 15 μm and 25 μm) are stored at different temperatures (room temperature and refrigerator). Unpacked samples acted as control. Respiration rates, CO_2 and O_2 concentrations inside the packages, transpiration rates and permeability of the plastics were measured by a gas sensor system. Furthermore, discoloration, wilting, development of off-odors and relative weight loss of caisin were evaluated. The total bacterial contamination was estimated using the pour plate method. Packed samples had a longer shelf life than control samples. Samples stored at low temperature had a longer shelf life than samples stored at room temperature. When caisin was enclosed in PP 30 at refrigerator, shelf life was extended to 12 days. PP 30 packed samples had highest CO_2 concentration and lowest O_2 concentration because PP 30 has the lowest gas permeability. Furthermore, PP30 packed samples had the lowest discoloration, wilting and development of off-odors. Total bacteria for packed samples stored in refrigerator were lower than packed samples in room temperature. The bacterial density of caisin is still below the safety standards.



Ringkasan

Caisin (*Brassica rapa* L. cv. Group Caisin) adalah salah satu sayuran daun yang sangat mudah rusak. Umur simpannya hanya sekitar 1-2 hari. Proses penanganan pasca panen yang buruk adalah sebab utama terjadinya kehilangan pasca panen. Proses masuknya ke pasar sebagian besar ditentukan oleh umur simpan dari produk. Oleh karena itu, penanganan pasca panen yang baik diperlukan untuk memperpanjang umur simpan. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh bahan pengemas dan suhu penyimpanan terhadap umur simpan caisin. Caisin yang digunakan untuk penelitian ini diambil dari dusun Talun Candi, Kabupaten Amburawa. Caisin dikemas di plastik yang berbeda (polypropylene (PP) 15 μm and 30 μm ; polyethylene (PE) 15 μm and 25 μm) disimpan pada suhu yang berbeda (suhu ruang dan refrigerator). Sample yang tidak dikemas digunakan sebagai kontrol. Laju respirasi, konsentrasi CO_2 and O_2 dalam pengemas, laju transpirasi dan permeabilitas plastik diukur dengan system sensor gas. Lebih jauh, perubahan warna, kelayuan, perubahan bau dan kehilangan berat dievaluasi. Jumlah total kontaminasi bakteri ditentukan dengan pour plate method. Sampel dikemas mempunyai umur simpan yang lebih panjang daripada samples kontrol. Sampel yang disimpan di suhu rendah mempunyai umur simpan yang lebih lama dibanding dengan sampel yang disimpan di suhu ruang. Ketika caisin dikemas dalam PP 30 di refrigerator, umur simpan dapat mencapai 12 hari. PP 30 mempunyai konsentrasi CO_2 tinggi dan O_2 rendah karena mempunyai permeabilitas gas yang rendah. Lebih jauh sampel yang dikemas di PP 30 mempunyai perubahan warna, tingkat kelayuan dan perubahan bau yang terkecil. Jumlah total bakteri untuk sampel yang dikemas di refrigerator lebih rendah dari sampel yang dikemas di suhu ruang. Total bakteri caisin masih di bawah standar yang aman.

PREFACE

First and foremost. I wish to thank GOD for blessing me with the opportunity to finish this thesis. I am proud of this important work and wish to thank all of the lecturer staffs of the Department of Food Technology, especially Dr. Stefan Persijn Phd and Dra. Laksmi Hartayanie, MP for making it possible for me to do this thesis. Thanks to my Family, Meliana, Er Lang Sen, He He Er Xien, Thai Sang Law Cin and all of my friends for their help and support when I did the experiment and during writing the report. Their encouragement and patient is very valuable for me. And all of the staff lecturers thank you for your untiring supports during learning teaching process in my faculty. I wish to thank Soleh, Wiwik and Priyanto for their assistance with the laboratory work and their companion during the study.

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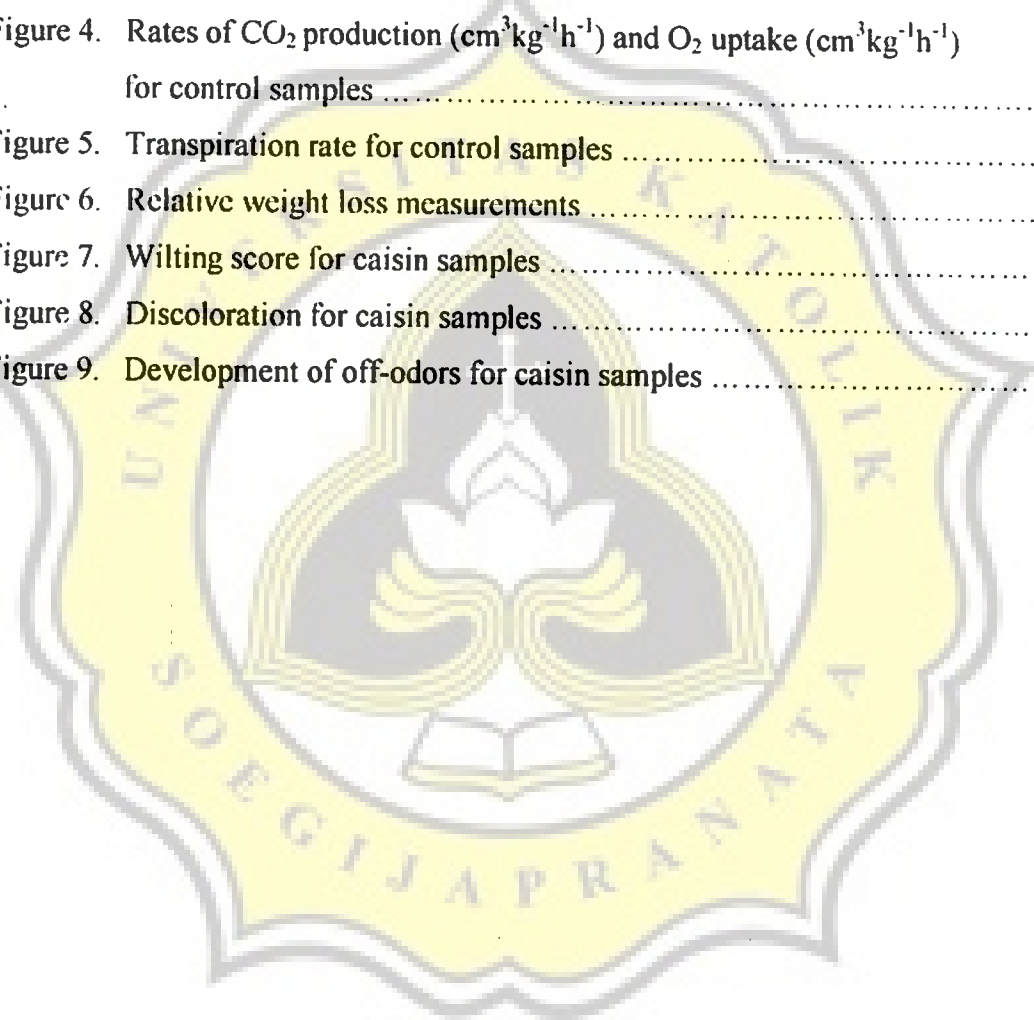
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