

EFFECTS OF FRUIT TYPE AND TIME OF HARVEST ON THE
QUALITY AND SHLEWING ON POST-HARVEST QUALITY
OF MANGOSTEEN (*Mangifera indica* L.) VARIETY
SUKHAWAN STORED UNDER AMBIENT TEMPERATURE

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Effects of sodium alginate combined with cinnamic acid coating
on post-harvest life of mango (*Mangifera indica* L.) var.
chokanan stored under ambient temperature / Tey Huan Yoon.

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PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

EFFECTS OF SODIUM ALGINATE COMBINED WITH CINNAMIC ACID
COATING ON POST-HARVEST LIFE OF MANGO (*MANGIFERA INDICA L.*)
VAR. CHOKANAN STORED UNDER AMBIENT TEMPERATURE

By
Tey Huan Yoon

Research Report submitted in partial fulfillment of
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ENDORSEMENT

The project report entitled **EFFECTS OF SODIUM ALGINATE COMBINED WITH CINNAMIC ACID COATING ON POST-HARVEST LIFE OF MANGO (*Mangifera indica* L.) VAR. CHOKANAN STORED UNDER AMBIENT TEMPERATURE**

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has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department **AGROTECHNOLOGY** in partial fulfillment of the requirement of the degree of **BACHELOR OF SCIENCE IN AGROTECHNOLOGY (POST HARVEST TECHNOLOGY)**, Faculty of Agrotechnology and Food Science, University Malaysia Terengganu.



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DECLARATION

I hereby declare that the work in this thesis is my own expect
for quotations and summaries which have been duly
acknowledged.

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ABSTRACT

This study was conducted to examine the effects of sodium alginate (2% or 4%) combined with cinnamic acid (4mM or 6mM) on shelf life of mango fruits (*Mangifera indica* L.) stored at 25°C for fifteen days. The effectiveness of the treatments in extending shelf life was measured by determining the post-harvest quality and post-harvest disease of mango fruits. Coated mango fruits had a greater quality and visual acceptability as compared to that of uncoated mango fruits. Mangoes coated with a combination of 4% sodium alginate and 6mM cinnamic acid delayed the external colour change, retaining fruit firmness and reduced total soluble solid change throughout the storage while mangoes coated with a combination of 2% sodium alginate and 6mM cinnamic acid had a strong barrier effect against the pathogenic microorganisms and fungi decay besides delaying ripening and reducing weight loss of mango fruits without impeding the development of sweetness of mango fruits. The results of this study suggests that mangoes coated with a combination of 2% sodium alginate and 6mM cinnamic acid is the most effective treatment in maintaining post-harvest quality and prolonging the shelf life of mangoes.

ABSTRAK

Kajian ini dijalankan untuk mengkaji kesan kombinasi rawatan natrium alginat (2%, 4%) dan asid cinamik (4mM, 6mM) ke atas jangka hayat buah mangga (*Mangifera indica* L.) yang disimpan pada suhu 25°C selama lima belas hari. Keberkesanan rawatan-rawatan ini dalam memanjangkan hayat buah mangga telah dinilai dengan menentukan ciri-ciri kualiti dan penyakit lepas tuai buah. Manga yang dirawat mempunyai kualiti dan ciri visual yang lebih baik berbanding dengan mangga yang tidak dirawat. Buah mangga yang dirawat dengan kombinasi 4% natrium alginat dan 6mM asid cinamik dapat melewati perubahan warna buah, mengurangkan kandungan pepejal terlarut dan mengekalkan kesegahan buah manakala buah mangga yang dirawat dengan kombinasi 2% natrium alginate dan 6mM asid cinamik dapat menghalang serangan daripada penyakit di samping melambatkan proses permasakan dan mengurangkan kehilangan berat buah tanpa menjejaskan perkembangan kemanisan buah mangga. Hasil kajian mencadangkan bahawa buah mangga yang dirawat dengan kombinasi 2% natrium alginat dan 6mM asid cinamik ialah kombinasi yang terbaik untuk mengekalkan kualiti dan memanjangkan tempoh buah mangga.