

EFFECT OF SODIUM ALGINATE COMBINED WITH VANILLIN ON
POSTHARVEST QUALITY OF GUAVA FRUIT (*Psidium guajava* L.)

By
Doreen Yong Sheng Yuen

Research Report submitted in partial fulfilment of
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Department of Agrotechnology
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
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ENDORSEMENT

The project report entitled **Effect of sodium alginate combined with vanillin on postharvest quality of guava fruit (*Psidium guajava* L.)** by **Doreen Yong Sheng Yuen**, Matric No. **UK 15689** has been reviewed and corrections have been made according to the the recommendations by examiners. This report is submitted to the Department of Agrotechnology in partial fulfilment of the requirements for the degree of Bachelor of Science in Agrotechnology (Post Harvest Technology), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.



(DR. ADZEMI MAT ARSHAD)
Main supervisor

DR. ADZEMI MAT ARSHAD
Ketua
Jabatan Agroteknologi
Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Date:

.....
(DR. CHUAH TSE SENG)
Co-supervisor

Date:

DECLARATION

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

Signature : 

Name : DOREEN YONG SHENG YUEN

Matric No : UK 15689

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ABSTRACT

This study was conducted to determine combine effects of sodium alginate plus vanillin coating on shelf life of Thai seedless guava fruits when stored under ambient temperature of 28°C for twelve days. Total soluble solids, firmness of fruits, colour changes, weight loss, disease severity and disease incidence of the fruits were assessed every two days. Green chlorophyll loss, fruit softening, disease severity and disease incidence of coated fruits were significantly reduced but total soluble solids were not affected by any treatments. Only treatments 5mM vanillin combined with 2 or 4% sodium alginate were able to significantly reduced weight loss as compared to control. The result of this study suggests that 4% sodium alginate combined with 5mM vanillin is the best treatment in extending shelf life of Thai seedless guava due to its advantages over other treatments in retention of fruit firmness, reduced weight loss and ability to maintain disease-free for an extended period of two days.

ABSTRAK

Kajian ini dijalankan untuk mengkaji kesan kombinasi penyalutan natrium alginat dan vanillin ke atas jangka hayat buah jambu tidak berbiji Thai yang disimpan pada suhu bilik (28°C) selama dua belas hari. Kandungan pepejal terlarut, tekstur buah, kadar kehilangan berat, perubahan warna buah, insiden penyakit dan tahap jangkitan buah dinilai setiap dua hari. Kadar kehilangan klorofil, perlembutan buah, insiden penyakit dan tahap jangkitan bagi buah dapat dikurangkan dengan penyalutan sodium alginat dan vanillin tetapi kandungan pepejal terlarut tidak dipengaruhi oleh penyalutan. Hanya rawatan 5mM vanilin digabungkan dengan 2 atau 4% natrium alginat dapat mengurangkan kadar kehilangan berat buah berbanding dengan kawalan. Keputusan kajian ini mencadangkan bahawa kombinasi 4% sodium alginat dan 5mM vanilin merupakan rawatan yang terbaik dalam pemanjangan tempoh penyimpanan buah jambu tidak berbiji Thai kerana rawatan ini mempunyai kelebihan dalam mengekalkan keteguhan buah, mengurangkan kadar kehilangan berat buah di samping melambatkan insiden penyakit selama dua hari berbanding rawatan lain.