

## **ABSTRAK**

### **EFFECTS OF FRUIT COATING OF KD-112, FUNGICIDE PROCHLORAZ, AND STORAGE TEMPERATURES ON FRUIT SHELF-LIFE AND QUALITIES OF 'CALIFORNIA' PAPAYA**

By

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Papaya (*Carica papaya* L.) fruit contains some vitamins and antioxidants. Papaya is classified as a climacteric fruit, so it ripens during storage. Short shelf-life and also has a fruit that changes very quickly are problems in 'California' papaya. Postharvest handling with application of sugar ester blend, fungicide Prochloraz and low temperature were required to prolong the shelf-life and to slow fruit deterioration of the 'California' papaya.

This research was aimed to study the effects of the application of a single treatment, two treatment combinations and three treatment combinations of sugar ester blend, the fungicide Prochloraz, and low-temperature to shelf-life and quality of 'California' papaya, as well as to get the best treatment of all treatment.

This research was conducted in the Laboratory of Horticultural Postharvest, Departement of Agrotechnology, Faculty of Agriculture, University of Lampung.

The experiment was conducted on July to August 2016. The study used a

completely randomized design (CRD) with five replicates, arranged in a factorial 2 x 2 x 2 of sugar ester blend ( $KD_0$  without and  $KD_1$  with sugar ester blend 14%), fungicide Prochloraz ( $F_0$  without and  $F_1$  with Prochloraz 0,67 ml/l), and temperatures ( $T_0$  27– 28 °C and  $T_1$  16–18 °C).

The results showed that (1) the application of a single treatment of KD-112 and low temperature was able to extend fruit shelf-life by 3.75 and 8.25 days longer consecutively compared to control and were able to slow down the changes in quality of the fruit of 'California' papaya; (2) the application of a single treatment of fungicide Prochloraz had no effect on shelf-life and qualities of 'California' papaya, but should still be applied to handle postharvest disease on papaya fruit; (3) the application of two treatment combination (KD-112 and the fungicide Prochloraz, KD-112 and low-temperature, the fungicide Prochloraz and low-temperature) were able to extend fruit shelf-life by 4; 12; 8.5 days longer consecutively compared to control and were able to slow down the changes in qualities of the fruit of 'California' papaya and pathogens appeared on 11 days after storage; (4) the application of three treatment combinations (KD-112, the fungicide Prochloraz, and low-temperature) were able to extend fruit shelf-life up to 11.2 days longer consecutively compared to control, it was able to slow down the changes in quality of the fruit of 'California' papaya, and pathogens appeared on 14 days after storage, and that treatment was the best treatment from all that applied.

**Keyword:** KD-112, papaya, Prochloraz, quality, temperature

## **ABSTRAK**

### **EFEK PELAPIS BUAH KD-112, FUNGISIDA PROCHLORAZ, DAN SUHU SIMPAN TERHADAP MASA SIMPAN DAN MUTU BUAH PEPAYA ‘CALIFORNIA’**

Oleh

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Buah pepaya (*Carica papaya* L.) memiliki beberapa kandungan vitamin dan antioksidan. Buah pepaya ‘California’ tergolong ke dalam buah klimakterik, sehingga dapat masak saat penyimpanan. Masa simpan buah yang singkat dan penurunan mutu buah yang cepat merupakan masalah yang dihadapi pada buah pepaya ‘California’. Penanganan pascapanen dengan aplikasi *sugar ester blend*, fungisida Prochloraz dan suhu rendah diperlukan agar dapat memperpanjang masa simpan dan memperlambat penurunan mutu buah pepaya ‘California’.

Penelitian ini bertujuan untuk mengetahui efek aplikasi setiap perlakuan tunggal, dua kombinasi perlakuan dan tiga kombinasi perlakuan antara KD-112, fungisida Prochloraz, dan suhu rendah terhadap masa simpan dan mutu buah pepaya ‘California’, serta untuk mendapatkan perlakuan terbaik. Penelitian ini dilaksanakan di Laboratorium Pascapanen Hortikultura, Jurusan Agroteknologi, Fakultas Pertanian, Universitas Lampung pada Juli hingga Agustus 2016.

Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan lima ulangan yang disusun secara faktorial  $2 \times 2 \times 2$ , yaitu KD-112 ( $KD_0$  tanpa KD-112 dan  $KD_1$  dengan KD-112 14%), fungisida Prochloraz ( $F_0$  tanpa Prochloraz dan  $F_1$  dengan Prochloraz 0,67 ml/l), dan suhu simpan ( $T_0$  27– 28 °C dan  $T_1$  16– 18 °C).

Hasil penelitian menunjukkan bahwa (1) pengaplikasian perlakuan tunggal KD-112 dan suhu rendah memperpanjang masa simpan 3,75 dan 8,25 hari lebih lama dibanding kontrol serta mampu memperlambat perubahan mutu buah pepaya ‘California’; (2) perlakuan tunggal fungisida Prochloraz tidak berpengaruh terhadap masa simpan dan mutu buah pepaya ‘California’, tetapi pengaplikasian fungisida Prochloraz tetap harus dilakukan untuk menanggulangi penyakit pascapanen pada buah pepaya; (3) pengaplikasian dua kombinasi perlakuan (KD-112 dan fungisida Prochloraz, KD-112 dan suhu rendah, fungisida Prochloraz dan suhu rendah) terbukti mampu memperpanjang masa simpan berturut-turut 4;12;8,5 hari lebih lama dibanding kontrol dan mampu memperlambat perubahan mutu buah pepaya ‘California’ serta patogen muncul pada 11 hari setelah penyimpanan; (4) pengaplikasian tiga kombinasi perlakuan (KD-112, fungisida Prochloraz, dan suhu rendah) mampu memperpanjang masa simpan hingga 11,2 hari lebih lama dibanding kontrol, mampu memperlambat perubahan mutu buah pepaya ‘California’, dan kemunculan patogen pada 14 hari setelah penyimpanan serta perlakuan tersebut merupakan perlakuan terbaik dari pengaplikasian semua perlakuan yang diterapkan.

**Kata kunci:** KD-112, mutu, pepaya, Prochloraz, suhu