

## **ABSTRACT**

### **EFFECTS OF CHITOSAN, FUNGICIDE PROCHLORAZ, AND STORAGE TEMPERATURE ON FRUIT SHELF-LIFE AND QUALITIES OF 'CALIFORNIA' PAPAYA**

**By**

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'California' papaya is a climacteric fruit that has a short shelf-life of 3–7 days and its fruit qualities decrease quickly. The growth of fungal which causes disease in storage makes the qualities of fruit decreased faster, so technology of postharvest is needed to prolong its shelf-life, minimize the qualities of fruit decreasing and control fungal disease in storage. Some technologies that can be applied during papaya postharvest are coating with applying chitosan, Prochloraz fungicide, and low storage temperature. This study was aimed to determine the effects of application of one treatment, two treatments combination, and three treatments combination and to get the best treatment from all of fruit shelf-life and qualities of 'California' papaya application.

This research was conducted at the Laboratory of Horticultural Postharvest, Department of Agrotechnology, Faculty of Agriculture, University of Lampung. The research was conducted in July–August 2016. Treatment were arranged in a completely randomized design (RAL) with treatments arranged in a factorial 2 x 2

x 2, consisted of chitosan ( $K_0$  0% and  $K_1$  1,25%), Prochloraz fungicide ( $P_0$  0 ml/l dan  $P_1$  0,67 ml/l), and storage temperature ( $T_0$  27–28 °C and  $T_1$  16–18 °C).

The results showed that (1) chitosan coating treatment caused the shelf-life to be longer but did not affect the qualities 'California' papaya, (2) Prochloraz fungicide did not affect shelf-life and only affected fruit hardness, but Prochloraz fungicide treatment is recommended to control diseases postharvest, (3) low storage temperature treatment caused the shelf-life to be longer and affected weight loss, hardness, and °Brix 'California' papaya, (4) application of two combination treatments caused the shelf-life to be longer than control but did not affect the qualities of 'California' papaya, (5) application of three combination treatments caused the shelf-life to be longer but did not affect the qualities of 'California' papaya, and that treatment was the best treatment.

**Keywords:** papaya, chitosan, prochloraz, temperature, quality

## **ABSTRAK**

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

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Buah pepaya ‘California’ tergolong ke dalam buah klimakterik dengan masa simpan singkat antara 3–7 hari dan penurunan mutu buah yang cepat. Patogen penyebab penyakit yang berkembang di dalam penyimpanan mempercepat penurunan mutu buah, sehingga diperlukan penanganan pascapanen yang tepat untuk memperpanjang masa simpan, memperlambat perubahan mutu dan mengendalikan patogen penyakit. Penanganan yang dapat diterapkan dalam pascapanen pepaya di antaranya pengaplikasian kitosan, fungisida Prochloraz, dan suhu rendah. Penelitian ini bertujuan mengetahui efek aplikasi perlakuan tunggal, dua kombinasi perlakuan, tiga kombinasi perlakuan, dan mendapatkan perlakuan terbaik dari pengaplikasian semua perlakuan terhadap masa simpan dan mutu buah pepaya ‘California’.

Penelitian dilakukan di Laboratorium Hortikultura, Jurusan Agroteknologi, Fakultas Pertanian, Universitas Lampung pada bulan Juli–Agustus 2016.

Penelitian ini menggunakan Rancangan Acak Lengkap (RAL), dengan perlakuan yang disusun secara faktorial  $2 \times 2 \times 2$ , yaitu kitosan ( $K_0$  0% dan  $K_1$  1,25%), fungisida Prochloraz ( $P_0$  0 ml/l dan  $P_1$  0,67 ml/l), dan suhu simpan ( $T_0$  27–28 °C dan  $T_1$  16–18 °C).

Hasil penelitian menunjukkan bahwa (1) perlakuan tunggal kitosan memperpanjang masa simpan dan tidak mempengaruhi mutu buah pepaya 'California', (2) perlakuan tunggal fungisida Prochloraz tidak mempengaruhi masa simpan dan hanya mempengaruhi kekerasan buah, tetapi penerapan fungisida Prochloraz dilakukan untuk menanggulangi penyakit pascapanaen, (3) perlakuan tunggal suhu rendah memperpanjang masa simpan dan mempengaruhi susut bobot, kekerasan, dan °Brix buah pepaya 'California', (4) pengaplikasian dua kombinasi perlakuan memperpanjang masa simpan lebih lama dibanding kontrol dan tidak mempengaruhi mutu buah pepaya 'California', (5) pengaplikasian tiga kombinasi perlakuan mampu memperpanjang masa simpan lebih lama dibanding perlakuan lain dan tidak mempengaruhi mutu buah pepaya 'California', serta perlakuan tersebut merupakan perlakuan terbaik dari pengaplikasian semua perlakuan yang diterapkan.

**Kata kunci:** pepaya, kitosan, prochloraz, suhu, mutu