

ABSTRACT

EFFECTS OF PLASTIC WRAPPING, PROCHLORAZ FUNGICIDE, AND STORAGE TEMPERATURES ON FRUIT SHELF-LIFE AND QUALITIES OF 'CALIFORNIA' PAPAYA

By

JEANETTE FAJRYAH

Papaya 'California' is known to have a very short shelf-life and also has a fruit quality that changes very quickly. The purpose of this research was to study 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 laid out in a Completely Randomize Design (CRD) of 2 x 2 x 2 factorial with five replicates. The first factor was plastic wrapping [control/without plastic wrapping (W0) and with one layer of the plastic wrapping (W1)], the second factor was Prochloraz fungicide [without (F0) and with prochloraz 0.67 ml/l (F1)], and the third factor was storage temperature [room temperature of 27 – 28 °C (T0) and low temperature of 16 – 18 °C (T1)].

The results showed that (1) the application of an individual treatment of plastic wrapping was able to extend fruit shelf-life by 12.70 days longer, suppressed weight loss, and to maintain the hardness of fruit than control. However, plastic

wrapping did not affect the chemical qualities of the fruit of 'California' papaya; (2) the application of an individual treatment of Prochloraz fungicide did not affect fruit shelf-life and qualities of the fruit of 'California' papaya, Prochloraz fungicide should still be applied as a handling of 'California' papaya postharvest disease; (3) the application of an individual treatment of low temperature was able to extend fruit shelf-life by 8.30 days longer and affect fruit weight loss, but low temperature did not affect the fruit firmness and chemical qualities of the fruit of 'California' papaya; (4) the application of two combination treatment (plastic wrapping and Prochloraz fungicide as well as plastic wrapping and low temperature) were able to extend fruit shelf-life by 14.60 and 21.00 days longer consecutively compared with control and was able to maintain the hardness of the fruit, but that treatments did not affect weight loss and the fruit quality of 'California' papaya; (5) the application of two combination treatment Prochloraz fungicide and low temperature was able to extend fruit shelf-life by 10.20 days longer than control and affect fruit weight loss, but that treatments did not affect the fruit firmness and chemical qualities of the fruit of 'California' papaya; (6) the application of the three treatment combinations (plastic wrapping, the fungicide Prochloraz, and low temperature) were able to extend fruit shelf-life up to 23.40 days and it was the best treatment, but three treatment combinations did not affect the quality of 'California' papaya fruit.

Keywords: papaya, plastic wrapping, Prochloraz, temperature

ABSTRAK

EFEK *PLASTIC WRAPPING*, FUNGISIDA PROCHLORAZ, DAN SUHU SIMPAN TERHADAP MASA SIMPAN DAN MUTU BUAH PEPAYA ‘CALIFORNIA’

Oleh

JEANETTE FAJYRAH

Pepaya ‘California’ diketahui memiliki masa simpan yang sangat singkat dan juga memiliki perubahan mutu buah yang sangat cepat. Tujuan dari penelitian ini untuk 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 ini disusun dalam Rancangan Acak Lengkap (RAL) faktorial $2 \times 2 \times 2$ dengan lima ulangan. Faktor pertama adalah *plastic wrapping* [kontrol/tanpa *plastic wrapping* (W0) dan dengan satu lapis *plastic wrapping* (W1)], faktor kedua adalah fungisida Prochloraz [tanpa (F0) dan dengan prochloraz 0,67 ml/l (F1)], dan faktor ketiga adalah suhu simpan [(suhu ruang 27–28 °C (T0) dan suhu dingin 16–18 °C (T1)].

Hasil penelitian menunjukkan bahwa; (1) Aplikasi perlakuan tunggal *plastic wrapping* mampu memperpanjang masa simpan 12,70 hari lebih lama, menekan

susut bobot, dan mempertahankan kekerasan buah dibandingkan kontrol. Namun, tidak berpengaruh terhadap mutu kimia buah pepaya ‘California’; (2) Aplikasi perlakuan tunggal fungisida Prochloraz tidak berpengaruh terhadap masa simpan dan mutu buah pepaya ‘California’, namun aplikasi fungisida Prochloraz tetap harus dilakukan sebagai penanganan penyakit pascapanen buah pepaya ‘California’; (3) Aplikasi perlakuan tunggal suhu rendah mampu memperpanjang masa simpan 8,30 hari lebih lama dan berpengaruh terhadap susut bobot buah namun tidak berpengaruh terhadap kekerasan serta mutu kimia buah pepaya ‘California’; (4) Aplikasi dua kombinasi perlakuan (*plastic wrapping* dan fungisida Prochloraz serta *plastic wrapping* dan suhu rendah) mampu memperpanjang masa simpan berturut-turut 14,60 dan 21 hari lebih lama dibandingkan dengan kontrol serta mampu mempertahankan kekerasan buah, namun tidak berpengaruh terhadap susut bobot dan mutu kimia buah pepaya ‘California’; (5) Aplikasi dua kombinasi perlakuan fungisida Prochloraz dan suhu rendah mampu memperpanjang masa simpan 10,20 hari lebih lama dibandingkan kontrol dan berpengaruh terhadap susut bobot buah, namun tidak berpengaruh terhadap kekerasan dan mutu kimia buah pepaya ‘California’; dan (6) Aplikasi tiga kombinasi perlakuan (*plastic wrapping*, fungisida Prochloraz, dan suhu rendah) mampu memperpanjang masa simpan hingga 23,40 hari dan merupakan perlakuan terbaik namun tidak berpengaruh terhadap mutu buah pepaya ‘California’.

Kata kunci: pepaya, *plastic wrapping*, Prochloraz, suhu