

ABSTRACT

THE EFFECT OF POLYVINYL ALCOHOL ADDITION TO CHITOSAN-BASED EDIBLE COATING ON THE QUALITY OF RED CHILI (*Capicum Annum* L.) DURING COLD STORAGE

By

LETRIANI

Red chili peppers were highly needed in industries and households. Red chili peppers had characteristics that made them prone to damage. This study aimed to determine the effect of adding polyvinyl alcohol (PVA) to chitosan-based edible coatings on the quality of red chili during cold storage and determine the best concentration. The study used a non-factorial design with 3 replications. The tested factor was the concentration of polyvinyl alcohol, which consisted of 9 levels: P0 (Control), P1 (chitosan 3 g), P2 (chitosan 3 g + PVA 0.5 g), P3 (chitosan 3 g + PVA 1 g), P4 (chitosan 3 g + PVA 1.5 g), P5 (chitosan 3 g + PVA 2 g), P6 (chitosan 3 g + PVA 2.5 g), P7 (chitosan 3 g + PVA 3 g), P8 (PVA 3 g). The data homogeneity was analyzed using Bartlett's test, and the differences between treatments were tested using the Tuckey test. Subsequently, the data were analyzed using analysis of variance and further tested using the DMRT (Duncan Multiple Range Test) at the 5% level. Texture and color scoring were performed by 15 panelists. The treatment had an effect on the parameters of moisture content, weight loss, hardness level, and texture, but did not affect the color parameter. The P7 treatment produced the best red chili peppers after 18 days of cold storage, with a moisture content of 76.05%, hardness level of 139.33 gf, texture (slightly hard), color L* (40.54), a* (29.71), b* (12.40), color (red), and weight loss of 18.03%.

Keywords: chitosan, cold storage, edible coating, polyvinyl alcohol, red chili

ABSTRAK

PENGARUH PENAMBAHAN POLIVINIL ALKOHOL PADA *EDIBLE COATING* BERBASIS KITOSAN TERHADAP MUTU CABAI MERAH (*Capsicum annum* L) SELAMA PENYIMPANAN SUHU DINGIN

Oleh

LETRIANI

Cabai merah sangat dibutuhkan di industri dan rumah tangga. Cabai merah memiliki karakteristik yang mudah mengalami kerusakan. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan polivinil alkohol pada *edible coating* berbasis kitosan terhadap mutu cabai merah selama penyimpanan suhu dingin dan menentukan konsentrasi terbaik. Penelitian ini disusun menggunakan desain non-faktorial dengan 3 kali ulangan. Faktor yang diuji adalah konsentrasi polivinil alkohol yang terdiri dari 9 taraf, yaitu P0 (Kontrol), P1(kitosan 3 g), P2 (kitosan 3g + PVA 0,5 g), P3 (kitosan 3 g+ PVA 1g), P4 (kitosan 3 g + PVA 1,5 g), P5 (kitosan 3g + PVA 2 g), P6 (kitosan 3 g + PVA 2,5 g), P7 (kitosan 3 g + PVA 3 g), P8 (PVA 3 g). Data hasil pengujian dianalisis kesamaan ragamnya dengan uji *Barlett* dan perbedaan antar data diuji menggunakan uji *Tuckey*. Selanjutnya, data diuji menggunakan analisis ragam dan diuji lanjutan menggunakan uji DMRT (*Duncan Multiple Range Test*) pada taraf 5%. Penilaian skoring tekstur dan warna dilakukan oleh 15 panelis. Perlakuan berpengaruh terhadap parameter kadar air, susut bobot, tingkat kekerasan, dan tekstur, namun tidak berpengaruh terhadap parameter warna. Perlakuan P7 menghasilkan cabai merah terbaik setelah penyimpanan 18 hari pada suhu dingin memiliki kadar air 76,05%, tingkat kekerasan 139.33 gf, tekstur (agak keras), warna L* (40,54), a* (29,71), b* (12,40), warna (merah), dan susut bobot 18,03%.

Kata kunci: cabai merah, *edible coating*, kitosan, polivinil alkohol, suhu dingin