ABSTRACT

APPLICATION OF ALGINATE-BASED EDIBLE COATING WITH BEESWAX ADDITION ON MINIMALLY PROCESSED PEARS (*Pyrus bretschneideri* Rehd.)

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Pears, especially after being cut, tended to experience a decline in quality and damage such as enzymatic browning, moisture loss, and texture changes. The application of alginate-based edible coating with the addition of beeswax was one of the innovations that could be applied to minimally processed pears to slow down the rate of deterioration. This study aimed to determine the effect of beeswax concentration in alginate-based edible coating solutions on the freshness of minimally processed pears and to identify the optimal beeswax concentration using the star method. The study was designed using a Completely Randomized Design (CRD) in a non-factorial arrangement with the addition of beeswax. The treatments consisted of six levels: BK as the control, B0 (alginate), B2 (alginate + 2% beeswax), B4 (alginate + 4% beeswax), B6 (alginate + 6% beeswax), and B8 (alginate + 8% beeswax), each with four replications. The results showed that the addition of beeswax to the alginate-based edible coating had a significant effect on moisture content, weight loss, firmness, total soluble solids, and color. The best treatment for maintaining pear freshness according to the star method was B4 (4% beeswax), which had a moisture content of 85.66%, weight loss of 1.79%, firmness of 874.63 gf, total soluble solids of 11.28 ˚Brix, and a lightness (L) value of 68.30 on day 12 of storage.

Keywords: alginate, beeswax, edible coating.

ABSTRAK

APLIKASI *EDIBLE COATING* BERBASIS ALGINAT DENGAN PENAMBAHAN LILIN LEBAH (*BEESWAX*) PADA BUAH PIR (*Pyrus bretschneideri* Rehd.*)* TEROLAH MINIMAL

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Buah pir, terutama setelah melalui proses pemotongan, cenderung mengalami penurunan kualitas serta kerusakan seperti pencoklatan enzimatik, kehilangan kelembaban, dan perubahan tekstur. Penerapan *edible coating* berbasis alginat dengan penambahan lilin lebah menjadi salah satu inovasi yang dapat diaplikasikan pada buah pir potong untuk menghambat laju kerusakan tersebut. Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi lilin lebah dalam larutan *edible coating* berbasis alginat terhadap kesegaran buah pir terolah minimal serta menentukan konsentrasi lilin lebah terbaik yang mampu mempertahankan kesegaran buah pir terolah minimal sesuai metode bintang. Penelitian disusun menggunakan Rancangan Acak Kelompok Lengkap (RAKL) secara non faktorial yaitu dengan penambahan lilin lebah. Perlakuan pada penelitian ini menggunakan 6 taraf yaitu BK sebagai kontrol, B0 (alginat), B2 (alginat + lilin lebah 2%), B4 (alginat + lilin lebah 4%), B6 (alginat + lilin lebah 6%), dan B8 (alginat + lilin lebah 8%) dalam 4 ulangan. Hasil penelitian menunjukkan bahwa penambahan lilin lebah dalam larutan *edible coating* berbasis alginat berpengaruh nyata terhadap parameter kadar air, susut bobot, tingkat kekerasan, total padatan terlarut, dan warna. Konsentrasi lilin lebah yang dapat mempertahankan kesegaran buah pir terbaik sesuai metode bintang yaitu pada perlakuan B4 (lilin lebah 4%) dengan deskripsi nilai kadar air 85,66%, susut bobot 1,79%, tingkat kekerasan 874,63 gf, total padatan terlarut 11,28 ˚brix, dan warna L* 68,30 pada penyimpanan hari ke-12.

Kata kunci : alginat, *edible coating*, lilin lebah.