EFEKTIFITAS PENGGUNAAN HIDROGEN PEROKSIDA DAN SUHU RENDAH PADA BUAH STROBERI (*Fragaria* x *Ananassa* var. *Kellybright*) PRODUK HIDROPONIK DI LINGKUNGAN TROPIS

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INTISARI

Stroberi merupakan buah yang mudah rusak. Kondisi lingkungan tropis dengan suhu dan kelembaban tinggi dapat meningkatkan risiko kerusakan mikrobiologis pada stroberi segar. Penanganan pasca panen dengan pencucian hidrogen peroksida **(**H_2O_2) diharapkan mampu menurunkan risiko kerusakan mikrobiologi selama penyimpanan sehingga dapat menambah umur simpan buah stroberi. Tujuan dari penelitian ini adalah untuk mengidentifikasi pengaruh perlakuan pencucian menggunakan H_2O_2 terhadap perubahan karakteristik mutu stroberi selama penyimpanan, menentukan konsentrasi H_2O_2 yang paling tepat dan mengidentifikasi biaya kualitasnya.

Stroberi varietas *kellybright* hasil budidaya hidroponik di Dusun Jetis, Argomulyo, Cangkringan, Sleman, DIY diberi perlakuan pencucian menggunakan larutan H_2O_2 *food grade* dengan metode perendaman pada suhu (27±1)^oC selama 2 menit. Percobaan ini disusun dalam rancangan acak lengkap (RAL) faktorial 3 x 3 x 2. Faktor pertama, metode budidaya meliputi budidaya tanah, hidroponik *Nutrient Film Technique (*NFT),dan hidroponik substrat. Faktor kedua, perlakuan pencucian meliputi kontrol (tanpa pencucian), H_2O_2 1%, dan H_2O_2 3%. Faktor ketiga, suhu penyimpanan meliputi (4±2)^oC dan (27±2)^oC. Selanjutnya dilakukan pengujian parameter kualitas meliputi pengujian susut bobot, warna, tekstur, kadar air, *Total Plate Count* (TPC) dan *Mold and Yeast Count* (MYC). Hasil pengujian dianalisis secara statistik dengan uji *two way anova* atau *Kruskal-Wallis.*

Hasil penelitian menunjukkan bahwa penggunaaan H_2O_2 pada proses pencucian buah stroberi dapat menjaga parameter mutu warna dan efektif dalam mereduksi jumlah kontaminasi bakteri mesofilik, kapang dan khamir pada awal penyimpanan., namun tidak mampu mempertahankan parameter mutu susut bobot dan tekstur buah stroberi selama penyimpanan. Pencucian buah stroberi dengan H_2O_2 1% lebih stabil dalam menjaga kualitas serta mampu meningkatkan daya simpan buah stroberi saat di kombinasikan dengan penyimpanan suhu (4±2)^oC. Biaya kualitas yang diperlukan untuk perlakuan pencucian stroberi dengan H_2O_2 1% dengan skala produksi 500 pack/bulan sebesar Rp 577.174,71.

Kata kunci:hidrogen peroksida, lingkungan tropis, stroberi

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THE EFFECTIVENESS OF USE HYDROGEN PEROXIDE AND LOW TEMPERATURE IN STRAWBERRY FRUITS (*Fragaria* x *Ananassa* var. *Kellybright*) HYDROPONIC PRODUCT IN TROPICAL ENVIRONMENT

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ABSTRACT

Strawberries are a perishable fruit. Tropical environmental conditions with high temperature and humidity can increase the risk of microbiological damage to fresh strawberries. Post-harvest handling by washing use hydrogen peroxide (H_2O_2) is expected to reduce the microbiological damage during storage so it can increase the shelf life of strawberries. This study is aimed to identifying the impact of H_2O_2 washing treatment on quality and characteristics changes of strawberries during storage, determine the most appropriate H_2O_2 concentration and identify the cost of quality.

Kellybright strawberry varieties from hydroponic cultivation in Jetis, Argomulyo, Cangkringan, Sleman, Special region of Yogyakarta were treated with washing by a food grade H_2O_2 solution using a immertion method at (27 ± 1) °C for 2 minutes. This study was arranged in a 3 x 3 x 2 factorial Complete Randomized Design (CRD). The first factor were cultivation methods include soil cultivation, hydroponic Nutrient Film Technique *(*NFT), and hydroponic substrates. The second factor were washing treatment includes control (without washing), 1% H_2O_2, and 3% H_2O_2. The third factor were storage temperature includes (4 ± 2) ^oC and (27 ± 2) ^oC. Further testing of quality parameters includes testing of weight loss, color, texture, moisture content, Total Plate Count (TPC) and Mold and Yeast Count (MYC). The test results were analyzed by two-way anova or Kruskal-Wallis.

The results showed that washing strawberries with H_2O_2 can maintain color parameter and efective to reduce of mesophilic bacterial, mold and yeast contamination at First, but can not maintain firmness and water content of strawberry during strorage. Washing strawberries with 1% H_2O_2 is more stable in maintaining quality and was able to increase the shelf life of strawberries when combined with (4±2) ^oC storage temperature. The cost of quality required for strawberry washing treatment with H2O2 1% with a scale of 500 pack / month was Rp 577,174.71.

Keywords: hydrogen peroxide, strawberry, tropical environment

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