

**PERANCANGAN PROTOTIPE ACTIVE-MODIFIED ATMOSPHERE
PACKAGING BERBASIS OXYGEN ABSORBER PADA TOMAT SEGAR
(*Solanum lycopersicum*)**

Oleh

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ABSTRAK

Tomat (*Solanum lycopersicum*) adalah komoditas populer di Indonesia yang rentan terhadap kerusakan selama penyimpanan akibat laju respirasi tinggi yang memicu produksi etilen dan degradasi likopen. Penyimpanan dingin (4°C) dapat memperlambat proses penuaan, namun meningkatkan risiko *Chilling injury* (CI). Penelitian ini bertujuan untuk mengkaji pengaruh kombinasi kemasan plastik (PP, LDPE, BOPP) dan proporsi *oxygen absorber* (0 cc, 50 cc, 100 cc, 150 cc) terhadap kualitas penyimpanan tomat. Buah tomat dikemas dalam *Active-Modified Atmosphere Packaging* (a-MAP) dan disimpan di suhu dingin selama 10 hari, diikuti dengan penyimpanan suhu ruang selama 10 hari. Data dianalisis menggunakan ANOVA dan Uji Zeleny. Hasil penelitian menunjukkan bahwa kombinasi kemasan LDPE dengan *oxygen absorber* 150 cc memberikan paling optimal dalam mengontrol kadar oksigen, laju respirasi, dan warna kulit (a*) meskipun tidak ada perbedaan signifikan pada parameter susut bobot dan CI *Indices*.

Kata kunci: *Tomat, Chilling injury, MAP, Oxygen Absorber*

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**DESIGN OF AN ACTIVE-MODIFIED ATMOSPHERE PACKAGING
PROTOTYPE BASED ON OXYGEN ABSORBER ON FRESH TOMATOES
(*Solanum lycopersicum*)**

by

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ABSTRACT

Tomato (*Solanum lycopersicum*) is a popular commodity in Indonesia that is vulnerable to damage during storage due to its high respiration rate, which triggers ethylene production and degradation of lycopene. Cold storage (4°C) can slow down the aging process but increases the risk of Chilling injury (CI). This study aims to investigate the effect of the combination of plastic packaging (PP, LDPE, BOPP) and the proportions of oxygen absorbers (0 cc, 50 cc, 100 cc, 150 cc) on the storage quality of tomatoes. The tomatoes were packaged in Active Modified Atmosphere Packaging (a-MAP) and stored at cold temperatures for 10 days, followed by storage at room temperature for another 10 days. Data were analyzed using ANOVA and the Zeleny Test. The results showed that the combination of LDPE packaging with 150 cc of oxygen absorber was the most optimal in controlling oxygen levels, respiration rates, and skin color (a^*), although no significant differences were observed in the parameters of weight loss and CI indices.

Keywords: *Tomato, Chilling injury, MAP, Oxygen Absorber*

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