

**STUDI PENGGUNAAN OZON UNTUK
MENGURANGI *CHILLING INJURY* PADA BUAH
ALPUKAT (*Persea americana* Mill) VARIETAS
TONGAR**

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ABSTRAK

Buah Alpukat Tongar merupakan komoditas hortikultura bernilai ekonomi tinggi, namun sangat rentan mengalami *chilling injury* (kerusakan dingin) saat disimpan pada suhu rendah. Salah satu cara untuk mengurangi *chilling injury* yaitu dengan pemaparan ozon (O₃), gas reaktif yang dapat menekan gejala *chilling injury* selama penyimpanan dingin. Penelitian ini bertujuan untuk menentukan lama pemaparan ozon terbaik dalam mengurangi *chilling injury* pada buah alpukat varietas Tongar. Metode yang digunakan yaitu eksperimen dengan Rancangan Acak Lengkap (RAL) satu faktor, yaitu lama pemaparan ozon (5 menit, 10 menit, dan 15 menit), kemudian disimpan pada suhu 10°C. Berdasarkan hasil penelitian menunjukkan bahwa penggunaan ozon mampu mengurangi *chilling injury* pada buah alpukat Tongar selama penyimpanan dingin. Waktu paparan ozon 10 menit merupakan perlakuan terbaik. Nilai pengamatan yang diperoleh perlakuan terbaik ini yaitu, konsumsi O₂ sebesar 70,042 mL/kg jam, susut bobot sebesar 4,357 %, perubahan warna (*light*) sebesar 41,007, perubahan warna (*hue*) sebesar 117,329, total padatan terlarut sebesar 7,968 °Brix, *chilling injury* sebesar 2,405 %, dan *electrolyte leakage* sebesar 22,693 %.

Kata kunci : Alpukat Tongar, ozon, *chilling injury*, penyimpanan dingin, suhu dingin.

STUDY ON THE USE OF OZONE TO REDUCE CHILLING INJURY IN AVOCADO (*Persea americana* Mill) VARIETY TONGAR

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ABSTRACT

The Tongar avocado (*Persea americana* Mill) is a horticultural commodity with high economic value; however, it is highly susceptible to chilling injury when stored at low temperatures. One approach to reducing chilling injury is exposure to ozone (O₃), a reactive gas capable of suppressing chilling injury symptoms during cold storage. This study aimed to determine the optimal duration of ozone exposure in reducing chilling injury in Tongar avocado fruit. The research was conducted using an experimental method with a Completely Randomized Design (CRD) consisting of a single factor, namely ozone exposure duration (5 minutes, 10 minutes, and 15 minutes), followed by storage at a temperature of 10°C. The results showed that ozone application was effective in reducing chilling injury in Tongar avocado fruit during cold storage. An ozone exposure time of 10 minutes was identified as the most effective treatment. The measured values obtained from this optimal treatment were oxygen consumption of 70.042 mL/kg·h, weight loss of 4.357%, color change (lightness) of 41.007, color change (hue) of 117.329, total soluble solids of 7.968 °Brix, chilling injury of 2.405%, and electrolyte leakage of 22.693%.

Keywords: Tongar avocado, ozone, chilling injury, cold storage, low temperature.