

INTISARI

Kajian Teknis Pengaruh Lama Waktu Pemaparan dan Konsentrasi Gas Etilen Terhadap Pematangan Buah Tomat pada Penyimpanan Suhu Ruang

Gas etilen biasa digunakan dalam proses pematangan tomat. Keberhasilan proses pematangan menggunakan gas etilen berkaitan dengan lama waktu pemaparan dan konsentrasi etilen yang digunakan. Penelitian ini bertujuan untuk mengetahui pengaruh lama waktu pemaparan dan konsentrasi gas etilen terhadap sifat fisik buah tomat selama proses pematangan. Variasi perlakuan yang digunakan yaitu konsentrasi etilen 100, 150, 200 ppm dan lama waktu pemaparan 24, 48, 72 jam dengan tiga ulangan. Tomat *mature green* yang telah disortir kemudian dipapar menggunakan gas etilen, selanjutnya disimpan dalam respirometer dan suhu ruang.

Sifat fisik yang diamati yaitu susut bobot, warna, kekerasan, total padatan terlarut, dan laju respirasi. Selanjutnya dilakukan analisis statistik dan kinetika pada setiap parameter yang diukur. Hasil yang diperoleh menunjukkan bahwa lama waktu pemaparan berpengaruh terhadap laju respirasi, susut bobot, kekerasan, a^* , b^* , dan total padatan terlarut. Konsentrasi gas etilen berpengaruh terhadap susut bobot, a^* , b^* , dan total padatan terlarut. Interaksi keduanya berpengaruh terhadap a^* dan kekerasan buah. Kombinasi perlakuan yang paling optimal mematangkan buah selama 12 hari penyimpanan yaitu pemaparan 200 ppm gas etilen selama 72 jam.

Kata kunci: gas etilen, konsentrasi etilen, lama waktu pemaparan, tomat

ABSTRACT

Technical Study on the Effect of Exposure Duration and Ethylene Gas Concentration on Tomato Fruit Ripening at Room Temperature Storage

Ethylene gas is often used in artificial ripening of tomato. The successfull of the ripening process with ethylene gas is related to the exposure duration and the concentration of ethylene gas used. This study aimed to find out the effect of ethylene consentration and exposure duration on the physical characteristics of tomato during ripening process. Ethylene concentration of 100, 150, and 200 ppm and exposure durations of 24, 48, and 72 hours with three replication were investigated. Selected mature green tomato were exposed to ethylene gas, after exposure were then loaded in the respirometer and stored in room temperature.

Physical characteristics that investigated were weight loss, color, hardness, total dissolved solids, and respiration rate. Furthermore, statistical and kinetics analysis was carried out on each measured parameter. The results obtained indicate that exposure duration has an effect on respiration rate, weight loss, hardness, a *, b *, and total dissolved solids. Ethylene gas concentration affected weight loss, a *, b *, and total dissolved solids. Their interaction affects a * and fruit hardness. The best treatment combination ripens the fruit for 12 days of storage was exposure to 200 ppm of ethylene gas for 72 hours.

Keywords: ethylene gas, ethylene concentration, exposure time, tomato