

INTISARI

Pemuliaan tanaman tomat di Universitas Gadjah Mada (UGM) menghasilkan tanaman dengan produksi tinggi tetapi sulit masak atau dengan istilah tomat *non-ripening* (NOR). Penelitian ini bertujuan untuk mendapatkan bahan yang terbaik untuk menginduksi kematangan buah, serta untuk mendapatkan konsentrasi ethephon (ET) atau dosis kalsium karbida (CaC_2) yang terbaik untuk menginduksi kematangan buah tomat NOR galur MA 131-6-3. Produksi tomat sebagai bahan penelitian dilaksanakan secara khusus untuk penelitian ini. Percobaan penyimpanan buah dilakukan di ruang penyimpanan dengan suhu 28,30 plus-minus 1,75 derajat celsius dan kelembaban relatif 60,69 plus-minus 2,33%. Sembilan perlakuan disusun dalam Rancangan Acak Kelompok Lengkap (RAKL) dengan tiga ulangan. Perlakuan terdiri dari kontrol, konsentrasi ET (375, 750, 1125, dan 1500 ppm), dan dosis CaC_2 (5, 10, 15, dan 20 g/kg). Analisis statistik dilakukan dengan *Analysis of Variance* (ANOVA) dan uji lanjut dengan Tukey's *Honestly Significant Difference* (HSD) alfa = 0,05. Hasil menunjukkan bahwa perlakuan CaC_2 lebih efektif dalam menginduksi kematangan dibandingkan ET. Sedangkan perlakuan A1 (ET 375 ppm) dan A8 (CaC_2 20 g/kg) yang menurut indikator kondisi kematangan dan kualitas buah tomat NOR lebih baik. Buah tomat NOR tidak menunjukkan perubahan dari hijau menjadi merah, tetapi hanya menguning pada semua perlakuan. Seluruh variabel pengamatan berbeda nyata antar perlakuan, kecuali kadar air dan likopen.

Kata kunci: ethephon, kalsium karbida, kematangan buah, kualitas buah, tomat NOR

ABSTRACT

Tomato plant breeding at Universitas Gadjah Mada (UGM) produced line MA 131-6-3 with high production but difficult to ripen, mentioned as non-ripening (NOR) tomato. The study aimed to obtain the best material to induce ripeness, as well as to obtain the best concentration of ethephon (ET) or calcium carbide (CaC_2) dose to induce fruit maturity of NOR tomato line MA 131-6-3. Tomato production was carried out as research material. Fruit storage experiments were carried out in a storage room with temperature of 28,30 plus-minus 1,75 degrees celcius and relative humidity (RH) of 60,69 plus-minus 2,33%. Nine treatments were arranged in a Completely Randomized Block Design (CRBD) with three replications. The treatments consisted of control, concentrations of ET (375, 750, 1125, and 1500 ppm), and doses of CaC_2 (5, 10, 15, and 20 g/kg). The statistical analyses were carried out using Analysis of Variance (ANOVA) and post-hoc test with Tukey's Honestly Significant Difference (HSD) $\alpha = 0,05$. The results showed that CaC_2 treatment was more effective in inducing maturity than ET. Meanwhile treatments A1 (ET 375 ppm) and A8 (CaC_2 20 g/kg) which according to indicators of ripeness conditions and NOR tomato fruit quality were the best. NOR tomato did not show an alter from mature green to red, but only turning for all treatments. All observational variables for fruit quality were significantly different between treatments, except water content and lycopene.

Keywords: ethephon, calcium carbide, NOR tomato, fruit ripening, fruit quality