

ABSTRACT

STUDY OF ACTIVE COMPONENTS OF *Lasiodiplodia theobromae* CULTURE TO ACCELERATE RIPENING OF AMBON BANANA FRUITS (*Musa paradisiaca* L.)

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Banana (*Musa paradisiaca* L.) is a climacteric fruit that requires specific postharvest handling to maintain its quality. This study aimed to determine the optimal concentration of active compounds derived from the culture of *Lasiodiplodia theobromae* in accelerating the ripening of Ambon bananas. A Completely Randomized Block Design (CRBD) was applied with seven concentration levels (0 ppm, 0.5 ppm, 1 ppm, 1.5 ppm, 2 ppm, 2.5 ppm, and 3 ppm), each repeated three times. Extraction was performed using ethyl acetate and fractionated using column chromatography. Identification of active compounds was conducted using LC-MS, resulting in the detection of four compounds, namely 1,1,2-triaminoguanidine, tetradecylamine, O-(1,2,3,4,4,5,5,6,6-nonaaminocyclohex-2-en-1-yl) hydroxylamine, and 9,10-dioctyloctadecan-9-amine. Observed parameters included weight loss, color (L*, a*, b*), firmness, sugar content, and moisture content. The results showed that concentration of 2.5 ppm was most effective in accelerating the ripening of Ambon bananas, with a weight loss of 5,37%, L* value of 62,55 (bright), a* value of -8,95 (green), b* value of 41,62 (yellowish), firmness of 4.765,00 gf, sugar content of 14,33%, and moisture content of 71,16%.

Keyword: *Lasiodiplodia theobromae*, Ambon banana, ripening fruit,
active compounds, LC-MS

ABSTRAK

KAJIAN KOMPONEN AKTIF KULTUR *Lasiodiplodia theobromae* UNTUK MEMPERCEPAT KEMATANGAN BUAH PISANG AMBON (*Musa paradisiaca* L.)

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EKI PANJI PERMANA

Pisang (*Musa paradisiaca* L.) merupakan buah klimakterik yang memerlukan penanganan pascapanen khusus untuk menjaga kualitasnya. Penelitian ini bertujuan untuk mengetahui konsentrasi terbaik komponen aktif dari kultur *Lasiodiplodia theobromae* dalam mempercepat pematangan buah pisang ambon. Penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan tujuh taraf perlakuan konsentrasi (0 ppm, 0,5 ppm, 1 ppm, 1,5 ppm, 2 ppm, 2,5 ppm, dan 3 ppm) dengan tiga kali ulangan. Ekstraksi dilakukan menggunakan etil asetat dan difraksinasi dengan kolom kromatografi. Identifikasi komponen aktif dilakukan menggunakan LC-MS yang menghasilkan empat senyawa teridentifikasi yaitu 1,1,2-triaminoguanidine, tetradecylamine, O-(1,2,3,4,4,5,5,6,6nonaaminocyclohex-2-en-1-yl) hydroxylamine, dan 9,10-dioctyloctadecan-9-amine. Parameter yang diamati meliputi susut bobot, warna (L^* , a^* , b^*), tingkat kekerasan, kadar gula, dan kadar air. Hasil penelitian menunjukkan bahwa konsentrasi 1,5 ppm merupakan konsentrasi terbaik dalam mempercepat pematangan buah pisang ambon susut bobot 5,37%, nilai warna L^* 62,55 (cerah), a^* -8,95 (hijau), b^* 41,62 (kekuningan), tingkat kekerasan 4.765,00 gf, kadar gula 14,33%, dan kadar air 71,16%.

Kata kunci: *Lasiodiplodia theobromae*, pisang ambon, pematangan buah, komponen aktif, LC-MS