

PERTUMBUHAN PLANLET PISANG RAJA BULU PADA BERBAGAI PENCAHAYAAN DI RUANG INKUBASI DAN PENGGUNAAN MACAM ZAT PENCEGAH PENCOKLATAN SECARA *IN VITRO*

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ABSTRAK

Penelitian ini bertujuan untuk menentukan pencahayaan ruang inkubasi dan zat pencegah pencoklatan terhadap pertumbuhan planlet pisang raja bulu secara *in vitro* serta menentukan interaksi paling baik antara pencahayaan ruang inkubasi dengan macam zat pencegah pencoklatan pada pertumbuhan planlet pisang raja bulu secara *in vitro*. Penelitian dilaksanakan di laboratorium Bioteknologi Fakultas Pertanian UPN “Veteran” Yogyakarta pada bulan Juni – Agustus 2018. Metode penelitian yang digunakan adalah metode percobaan laboratorium yang disusun dengan Rancangan *Split Plot* dua faktor. Faktor pertama sebagai *main plot* adalah pencahayaan ruang inkubasi yaitu dengan cahaya selama 90 hari, tanpa cahaya selama 90 hari, tanpa cahaya pada 45 hari pertama, dan tanpa cahaya pada 45 hari terakhir. Faktor kedua sebagai *sub plot* adalah zat pencegah pencoklatan yaitu thidiazuron, arang aktif, dan vitamin C. Setiap kombinasi perlakuan diulang sebanyak 3 kali. Data dianalisis dengan menggunakan ANOVA (*Analisis of Varian*) pada jenjang nyata 5% dan apabila terdapat beda nyata dilakukan dengan Uji Jarak Berganda Duncan atau *Duncan’s Multiple Range Test* (DMRT) pada jenjang 5%. Hasil penelitian menunjukkan bahwa kombinasi perlakuan paling baik yaitu kombinasi semua tingkat pencahayaan dan vitamin C 0,88 mg/l terlihat pada parameter tingkat pencoklatan. Perlakuan pencahayaan 45 hari pertama memberikan hasil paling bagus pada hal persentase hidup, tinggi planlet, jumlah tunas, jumlah daun, panjang akar, dan bobot segar. Perlakuan vitamin C 0,88 mg/l memberikan hasil paling bagus pada hal persentase hidup, tinggi planlet, jumlah tunas, panjang akar, jumlah akar, bobot segar, dan bobot kering.

Kata Kunci : *in vitro*, pencahayaan, pencoklatan, pisang raja bulu.

THE GROWTH OF “PISANG RAJA BULU” PLANLETS IN VARIOUS LIGHTING IN THE INCUBATION ROOM AND THE USE OF VARIOUS TYPES OF BROWNING PREVENTION AGENTS BY *IN VITRO*.

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ABSTRACT

The aims of this research were to determine the lighting of incubation rooms and browning prevention agents on the growth of “Pisang Raja Bulu” planlets by *in vitro* and determine whether there is a best interaction between the incubation rooms lighting and the type of browning prevention agents in the growth of “Pisang Raja Bulu” planlets that plants *in vitro*. This research was conducted in the Biotechnology laboratory of the Faculty of Agriculture, UPN "Veteran" Yogyakarta on June - August 2018. The research method was a laboratory experiment method compiled with the Split Plot Design of two factors. The first factor as a main plot is the incubation room lighting, which is with light for 90 days, without light for 90 days, without light in the first 45 days, and without light in the last 45 days. The second factor as a sub plot is browning prevention agents, named thidiazuron, activated charcoal, and vitamin C. Each combination of treatments was repeated 3 times. The data were analyzed using ANOVA (Analysis of Variants) at a real level of 5% and if there were significant differences performed by Duncan's Multiple Range Test (DMRT) at 5% level. The result showed that there was the best combinations of treatments that is all combination of lighting and vitamin C 0,88 mg / l in terms of browning. The first 45 days lighting treatment gave the best result on the percentage of life, plantlet height, number of shoots, number of leaves, root length, and fresh weight. The treatment of vitamin C 0.88 mg / l gave the best result on the percentage of life, plantlet height, number of shoots, root length, number of roots, fresh weight, and dry weight.

Keywords: *in vitro*, lighting, browning, raja bulu banana.