

ABSTRAK

Tiropa Oktavia Parhusip, NIM 4193220025 (2019). Pengaruh Ekstrak Kulit Pisang Kepok (*Musa acuminata balbisiana* Colla) dan BAP Terhadap Pertumbuhan Planlet Kentang Merah (*Solanum tuberosum* L.) Secara In Vitro

Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak kulit pisang kepok (*Musa acuminata balbisiana* Colla) dan BAP dan interaksi keduanya terhadap pertumbuhan planlet kentang merah (*Solanum tuberosum* L.) secara in Vitro. Penelitian ini dilakukan pada bulan September-Oktober 2023 di Laboratorium Kultur Jaringan Tanaman G10 Agrotech Medan Jl.Sei Bahorok No. 47 F Medan Baru. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) faktorial dengan dua faktor. Faktor pertama adalah konsentrasi ekstrak kulit pisang kepok 3 taraf yaitu (0, 25 dan 50 g/L) dan faktor kedua adalah BAP yang terdiri dari 4 taraf yaitu (0, 0,5, 1 dan 1,5 mg/L). Diperoleh 12 kombinasi perlakuan dan masing-masing perlakuan diulang sebanyak 3 kali sehingga diperoleh 36 unit percobaan. Parameter penelitian tinggi planlet, jumlah tunas, jumlah daun dan jumlah akar dianalisis dengan *Analysis of Variance* (ANOVA) dan jika berbeda nyata akan dilakukan uji lanjut dengan *Duncan Multiple Range Test* (DMRT) pada taraf 5%. Hasil penelitian menunjukkan perlakuan ekstrak kulit pisang kepok dan BAP berpengaruh nyata terhadap tinggi planlet, jumlah tunas, jumlah daun dan jumlah akar. Rataan tinggi planlet tertinggi dihasilkan oleh ekstrak kulit pisang 50gr/L (7,60 cm), BAP 1mg/L (6,70 cm). Jumlah tunas terbanyak dihasilkan oleh ekstrak kulit pisang 50gr/L (8.33 tunas), BAP 0.5 mg/L (6,67 tunas). Jumlah daun terbanyak dihasilkan oleh ekstrak kulit pisang 25 gr/L yaitu (10.00 helai daun), BAP 0,5 mg/L sebanyak (8.00 helai daun). Jumlah akar terbanyak dihasilkan oleh perlakuan ekstrak kulit pisang 50gr/L yaitu (12.00 akar), Jumlah akar terbanyak dihasilkan oleh BAP 1 mg/L yaitu (7,33 akar). Rataan tinggi planlet dan daun terbanyak dihasilkan oleh interaksi perlakuan A2B1 (ekstrak kulit pisang 50g/L+0,5mg/L) yaitu 7.40 cm tinggi planlet dan 16,33 daun. Jumlah tunas terbanyak dihasilkan interaksi perlakuan A1B1 sebanyak 7,67 tunas dan Jumlah akar terbanyak dihasilkan oleh interaksi perlakuan A2B2 yaitu 8,67 akar.

Kata kunci : *Solanum tuberosum* L, ekstrak kulit pisang, BAP, *In Vitro*

ABSTRACT

Tiropa Oktavia Parhusip, NIM 4193220025 (2019). The Effect of Kepok Banana Peel Extract (*Musa acuminata balbisiana* Colla) and BAP on the Growth of Red Potato Plantlets (*Solanum tuberosum* L.) In Vitro.

This research aims to determine the effect of from kepok banana peel extract (*Musa acuminata balbisiana* Colla) and BAP and their interaction on the growth of red potato plantlets (*Solanum tuberosum* L.) in vitro. This research was conducted in September-October 2023 at the G10 Agrotech Medan Plant Tissue Culture Laboratory Jl. Sei Bahorok No. 47 F Medan Baru. This research used a factorial Completely Randomized Design (CRD) with two factors. The first factor is the concentration of kepok banana peel extract in 3 levels, namely (0, 25 and 50 g/L) and the second factor is BAP which consists of 4 levels, namely (0, 0.5, 1 and 1.5 mg/L). 12 treatment combinations were obtained and each treatment was repeated 3 times to obtain 36 experimental units. The research parameters were plantlet height, number of shoots, number of leaves and number of roots analyzed using *Analysis of Variance* (ANOVA) and if they were significantly different, further tests would be carried out using the *Duncan Multiple Range Test* (DMRT) at the 5% level. The results showed that the treatment of kepok banana peel extract and BAP had a significant effect on plantlet height, number of shoots, number of leaves and number of roots. The highest average plantlet height was produced by banana peel extract 50gr/L (7.60 cm), BAP 1mg/L (6.70 cm). The highest number of shoots was produced by banana peel extract 50gr/L (6.33 shoots), BAP 1.5 mg/L (6.33 shoots). The highest number of shoots was produced by banana peel extract 50gr/L (8.33 shoots), BAP 0.5 mg/L (6.67 shoots). The highest number of leaves was produced by banana peel extract 25 gr/L (10.00 leaves), BAP 0.5 mg/L (8.00 leaves). The highest number of roots was produced by treatment with 50 gr/L banana peel extract (12.00 roots), the highest number of roots was produced by BAP 1 mg/L (7.33 roots). The highest average height of plantlets and leaves was produced by the interaction of treatment A2B1 (banana peel extract 50g/L+0.5mg/L), namely 7.40 cm height of plantlets and 16.33 leaves. The highest number of shoots was produced by the A1B1 treatment interaction with 7.67 shoots and the highest number of roots was produced by the A2B2 treatment interaction (8.67 roots).

Key words : *Solanum tuberosum* L, banana peel extract, BAP, *In Vitro*