PENGARUH KOMBINASI AUKSIN SITOKININ DAN BEBERAPA LEVEL MEDIA MS TERHADAP PLANLET KOPI ROBUSTA (*Coffea canephora* Pierre ex A. Froehner)

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ABSTRAK

Kopi robusta merupakan komoditas perkebunan unggulan Indonesia yang memiliki peranan penting dalam sektor ekspor serta keunggulan berupa ketahanan terhadap hama dan penyakit. Perbanyakan tanaman kopi robusta umumnya dilakukan secara vegetatif, salah satunya melalui teknik kultur jaringan (kultur in vitro) untuk memperoleh bibit dalam jumlah besar dan seragam. Penelitian ini bertujuan untuk mengetahui pengaruh kombinasi auksin dan sitokinin, pengaruh level media Murashige and Skoog (MS), serta interaksi keduanya terhadap pertumbuhan planlet kopi robusta. Penelitian dilaksanakan pada bulan Januari hingga Mei 2025 di Laboratorium Kultur Jaringan Politeknik Negeri Jember. Rancangan percobaan yang digunakan adalah Rancangan Acak Lengkap Faktorial (RALF) dengan dua faktor, yaitu konsentrasi zat pengatur tumbuh (ZPT) dan level media MS. Faktor ZPT terdiri atas dua taraf, yaitu 0,5 ppm NAA dan kombinasi 0,5 ppm NAA + 4 ppm BAP, sedangkan faktor media MS terdiri atas tiga taraf, yaitu full MS , ½ MS, dan ¼ MS. Data dianalisis menggunakan analisis ragam (ANOVA) dan dilanjutkan dengan uji DMRT pada taraf nyata 5%. Hasil penelitian menunjukkan bahwa perlakuan ZPT berpengaruh nyata terhadap jumlah akar, dimana perlakuan tunggal 0,5 ppm NAA menghasilkan jumlah akar tertinggi. Level media MS berpengaruh nyata terhadap panjang akar, dengan media Full MS menghasilkan panjang akar tertinggi. Namun, interaksi antara kombinasi ZPT dan level media MS tidak memberikan pengaruh nyata terhadap seluruh parameter pengamatan pertumbuhan planlet kopi robusta.

Kata kunci: Kopi Robusta, Auksin, Sitokinin, Media MS, Planlet

THE EFFECT OF AUXIN-CYTOKININ COMBINATIONS AND DIFFERENS MS MEDIUM LEVELS ON ROBUSTA COFFEE (Coffea canephora Pierre ex A. Froehner)

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ABSTRACT

Robusta coffee is one of Indonesia's leading plantation commodities and plays an important role in the export sector, with advantages including resistance to pests and diseases. Propagation of Robusta coffee plants is generally carried out vegetatively, one of which is through tissue culture (in vitro culture) techniques to obtain large numbers of uniform seedlings. This study aimed to determine the effects of auxin and cytokinin combinations, MS (Murashige and Skoog) medium levels, and their interaction on the growth of Robusta coffee plantlets. The research was conducted from January to May 2025 at the Tissue Culture Laboratory of Politeknik Negeri Jember. The experiment employed a factorial completely randomized design (CRD) with two factors, namely plant growth regulator (PGR) concentrations and MS medium levels. The PGR factor consisted of two levels, namely 0.5 ppm NAA and a combination of 0.5 ppm NAA + 4 ppm BAP, while the MS medium factor consisted of three levels: Full MS, half-strength MS (½ MS), and quarter-strength MS (¼ MS). Data were analyzed using analysis of variance (ANOVA) followed by Duncan's Multiple Range Test (DMRT) at the 5% significance level. The results showed that PGR treatments significantly affected root number, with the single application of 0.5 ppm NAA producing the highest number of roots. MS medium levels significantly affected root length, with full MS medium resulting in the longest roots. However, the interaction between PGR combinations and MS medium levels did not significantly affect all observed growth parameters of Robusta coffee plantlets.

Keywords*: Robusta Coffee, Auxin, Cytokinin, MS Medium, Plantlet*