

PENGARUH BERBAGAI KONSENTRASI PGPR AKAR KOPI DAN ASAM AMINO TERHADAP PERTUMBUHAN BIBIT KOPI ROBUSTA (*Coffea canephora* L.) KLON BP 308

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ABSTRAK

Kopi merupakan salah satu komoditas perkebunan yang paling banyak diusahakan. Pembibitan kopi merupakan proses menjadikan benih tumbuh menjadi bibit siap tanam. Untuk mendapatkan pertumbuhan bibit kopi yang normal harus memperhatikan jenis media tanam serta ketersediaan unsur hara pada media tanam. Asam amino adalah protein yang sudah pecah melalui proses metabolisme menjadi molekul-molekul kecil. Penelitian ini bertujuan untuk mengetahui pengaruh PGPR akar kopi, asam amino dan interaksi antar kedua terhadap pertumbuhan bibit kopi robusta (*coffea canephora* L.). Penelitian ini dilaksanakan pada bulan October 2024 - february 2025 di lahan Labortorium Teknologi Produksi Benih, Politeknik Negeri Jember. Rancangan Acak Kelompok (RAK) Faktorial adalah metodologi penelitian yang digunakan dalam penelitian ini, dengan pgpr akar kopi sebagai faktor pertama dan asam amino sebagai faktor kedua. Pgpr yang digunakan dalam penelitian ini yang terdiri dari P0: 0%, P1: 3%, P2: 4%, dan P3: 5%. Untuk asam amino terdiri dari P0: 0%, P1: 3%, P2: 4%, dan P3: 5%. Penelitian ini memiliki total unit percobaan sebanyak 192. Data hasil apabila ada yang berbeda nyata, maka di lanjut menggunakan dengan uji beda nyata BNJ taraf 5%. Variabel pengamatan meliputi tinggi tanaman (cm), diameter batang (mm), jumlah daun (pasang), volume akar (ml), berat basah brangkas (g), dan berat kering brangkas (g). hasil menunjukkan bahwa perlakuan pgpr berpengaruh nyata pada parameter jumlah pasang pertumbuhan kopi robusta (*Coffea canephora* L.). Perlakuan asam amino berpengaruh nyata pada parameter berat kering brangkas, pemberian perlakuan A3 (4%) memiliki perlakuan terbaik. Interaksi penambahan PGPR dan asam amino tidak berpengaruh nyata terhadap semua parameter.

Kata kunci: PGPR Akar kopi, Asam Amino, Kopi Robusta

EFFECT OF VARIOUS CONCENTRATIONS OF COFFEE ROOT PGPR AND AMINO ACID ON THE GROWTH OF ROBUSTA COFFEE SEEDLINGS (Coffea canephora L.) CLON BP 308

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ABSTRACT

Coffee is one of the most widely cultivated plantation commodities. The seedling phase of coffee is the process of growing seeds into transplant-ready seedlings. To achieve optimal seedling growth, it is important to consider the type of growing media and the availability of nutrients in the medium. Amino acids are proteins that have been broken down through metabolic processes into smaller molecules. This study aims to determine the effects of coffee root-derived Plant Growth-Promoting Rhizobacteria (PGPR), amino acids, and their interaction on the growth of robusta coffee (Coffea canephora L.) seedlings. The research was conducted from October 2024 to February 2025 at the Seed Production Technology Laboratory field, Politeknik Negeri Jember. A factorial Randomized Complete Block Design (RCBD) was used, with coffee root PGPR as the first factor and amino acid concentrations as the second. PGPR treatments consisted of four concentrations: P0: 0%, P1: 3%, P2: 4%, and P3: 5%. Amino acid treatments also included four levels: A0: 0%, A1: 3%, A2: 4%, and A3: 5%. A total of 192 experimental units were used. When significant differences were observed, further analysis was conducted using the Honestly Significant Difference (HSD) test at the 5% significance level. The observed variables included plant height (cm), stem diameter (mm), number of leaf pairs, root volume (ml), fresh weight (g), and dry weight (g) of the plants. The results showed that PGPR treatment significantly affected the number of leaf pairs of robusta coffee seedlings. Amino acid treatment had a significant effect on plant dry weight, with the A3 (4%) treatment showing the best results. However, there was no significant interaction effect between PGPR and amino acid treatments on any of the observed parameters.

Keywords: *Coffee Root PGPR, Amino Acids, Robusta Coffee*