THE EFFECT OF DIFFERENT BAP (Benzyl Amino Purine) and MS Concentrations On The Growth Of Robusta Coffee Plantlets (Coffea canephora Pierre ex A. Froehner)

Supervised by Sepdian Luri Asmono, S.ST., MP.

Indana Zulfa
Plantation Plant Cultivation Study Program
Department of Agricultural Production, Jember State Polytechnic

ABSTRACT

Coffee is Indonesia's fourth major agricultural commodity since 2019, following palm oil, rubber, and coconut. However, national coffee production declined from 2021 to 2023. In 2022, coffee production decreased by 1.43 percent, from 786,190,000 tons to 774,960,000 tons. This study aimed to determine the effects of different BAP concentrations, MS medium concentrations, and their combinations on the growth of Robusta coffee plantlets. The research was conducted from January to May 2025 at the tissue culture laboratory of the State Polytechnic of Jember. This study used a factorial completely randomized design (FCRD) with two factors: BAP concentration at 3 levels (Z0 = 0 ppm, Z1 = 2 ppm, Z2 = 4 ppm) and MS medium concentration also at 3 treatment levels (M1 = full MS, M2 = ½ MS, M3 = ¼ MS). The obtained data were analyzed using ANOVA. If the calculated F value was greater than the table F value, it was followed by DMRT post-hoc test at 5% level. The results showed that the ¼ MS concentration had a significantly different effect on the number of shoots compared to full MS. It also had a highly significantly different effect on plantlet height and number of leaves compared to full MS concentration. Meanwhile, for plantlet height and number of leaves parameters, there was a significantly different effect with 2 ppm BAP in full MS concentration. However, BAP concentration did not significantly affect the growth of Robusta coffee plantlets.

Keywords: Robusta Coffee, BAP, MS Medium, Plantlet.