Application of Various Plant Growth Regulators and Earthing-Up on the Yield of Peanut (Arachis hypogaea* L.*)

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ABSTRACT

Pod formation and enlargement are strongly influenced by nutrient availability and growing media conditions during peg development. This study aimed to determine the interaction and effects of various plant growth regulators (PGRs) and earthing up on peanut yield. The study was conducted from September to December 2025 in Kaliurang Village, Sumbersari District, Jember Regency, at an altitude of approximately 98 m above sea level, with coordinates of 8.161181° S and 113.725046° E. The experiment used a Randomized Complete Block Design (RCBD) with two factors, namely PGR type and earthing up, with three replications. The PGR factor consisted of a control, shallot extract, coconut water, gibberellin, and nitrophenol, while the earthing-up factor consisted of one application at 25 days after planting (DAP) and two applications at 15 and 25 DAP. Data were analyzed using ANOVA, followed by orthogonal contrasts for the PGR factor, 5% LSD for the earthing-up factor, and DMRT for the interaction. The results showed an interaction between PGRs and earthing up on seed weight per sample, with the highest average of 16.00 g obtained from the combination of nitrophenol and one-time earthing up. PGRs significantly affected dry pod weight per sample (20.27 vs. 23.58 g), dry pod weight per plot (649.17 vs. 476.33 g), and 100-seed weight (50.26 vs. 39.86 g). Earthing up significantly affected dry pod weight per sample (22.02 g) and 100-seed weight (50.71 g). It can be concluded that the application of PGRs and earthing up can be one approach to optimizing pod formation and development, thereby supporting increased peanut yield.

Keywords: *bulking earthing up, phytohormones, Pod formation, Plant growth regulators*