ABSTRACT

Mung bean (*Vigna radiata* L.) is a food crop of significant economic and nutritional value. This study aimed to determine the effects of coconut water concentration, soaking duration, and their combination on the growth of mung bean seedlings. The research was conducted at the Agroecotechnology Screen House, Faculty of Agriculture, Malikussaleh University, from July to August 2026, using a factorial Completely Randomized Design (CRD) with two factors: coconut water concentration (0%, 30%, and 60%) and soaking duration (2 and 4 hours), with three replications. Observed parameters included germination percentage, seedling height, number of leaves, seedling fresh weight, and root length. Data were analyzed using the F-test, followed by DMRT at the 5% level if significant treatment effects were found. Coconut water concentration influenced mung bean seedling growth, specifically regarding germination percentage, plant height at 5–15 days after sowing (DAS), seedling fresh weight, and root length; the best results were obtained with a 60% coconut water concentration. Soaking duration affected plant height at 10 DAS, with the best results achieved at a 4-hour soaking duration. The combination of coconut water concentration and soaking duration influenced germination percentage, plant height at 10 DAS, and the number of leaves at 10 and 15 DAS; the best treatment combination was K1P2 (30% coconut water concentration + 4 hour soaking duration).

Keywords: auxin, germination, radicle, seed invigoration, seed viability.