

Aplikasi Pupuk Boron dan Waktu Aplikasi Giberelin terhadap Produksi dan Mutu Benih Kedelai (*Glycine max* [L.] Merrill). Application of Boron Fertilizer and Gibberellin Application Time on Soybean (*Glycine max* [L.] Merrill) Seed Production and Quality. *Supervised by Leli Kurniasari, S.P.,M.Si.*

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ABSTRACT

*This study aimed to evaluate the effects of Boron fertilizer application and Gibberellin application timing on the production and seed quality of soybean (*Glycine max* [L.] Merrill). The experiment was conducted using a factorial Randomized Complete Block Design (RCBD) consisting of two factors with three replications. The first factor was four levels of Boron fertilizer, while the second factor was four Gibberellin application timings. Observed parameters included growth characteristics, yield components, seed production, and physiological seed quality. 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 Boron fertilizer application significantly affected soybean seed production, with the application of 3 kg ha⁻¹ Boron producing the best response in seed yield parameters. The timing of Gibberellin application significantly to highly significantly influenced several growth, yield, and seed quality parameters. Gibberellin application 7 days before flowering resulted in the earliest flowering time, while application 4 days after flowering promoted better flower formation. Meanwhile, Gibberellin application 11 days after flowering produced the most favorable response in seed production and physiological seed quality. The interaction between Boron fertilizer and Gibberellin application timing significantly affected the number of productive branches, seed germination, and maximum growth potential. The combination of 1 kg ha⁻¹ Boron and Gibberellin application 11 days after flowering resulted in the best response in physiological seed quality. Overall, the combination of 2 kg ha⁻¹ Boron and Gibberellin application 11 days after flowering showed a relatively stable response in improving seed production and maintaining soybean seed quality.*

Keywords: Boron, Gibberellin, soybean, seed production, seed quality