

**PENGARUH DOSIS PUPUK BORON DAN KONSENTRASI PUPUK KNO₃
TERHADAP PRODUKSI DAN MUTU BENIH PARIJA (*Momordica
charantia* L.)** (*Effect of Boron Fertilizer Dosage and KNO₃ Concentration on the
Production and Seed Quality of Bitter Gourd (*Momordica charantia* L.)*)
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ABSTRACT

*The main constraint in bitter gourd (*Momordica charantia* L.) seed production is the low pollination percentage and suboptimal seed formation, which consequently reduce both seed yield and quality. Therefore, efforts to improve seed production are required through the application of micronutrient Boron and macronutrient potassium, which play important roles in enhancing seed production and quality. This study aimed to evaluate the effects of Boron fertilizer rates and potassium nitrate (KNO₃) concentrations on yield and quality of open-pollinated bitter gourd seeds. The research was conducted from July to October 2025 in Rowotamtu Village, Rambipuji District, Jember Regency, East Java, Indonesia. The experiment was arranged in a factorial randomized block design with two treatment factors and three replications. The first factor was Boron fertilizer rate (B), consisting of three levels: 0 kg ha⁻¹ (B0), 1 kg ha⁻¹ (B1), and 2 kg ha⁻¹ (B2). The second factor was KNO₃ concentration (K), comprising three levels: 5 g L⁻¹ (K1), 10 g L⁻¹ (K2), and 15 g L⁻¹ (K3). Data were analyzed using analysis of variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level. The results showed that the interaction between 2 kg ha⁻¹ Boron and 15 g L⁻¹ KNO₃ (B2K3) produced the best performance, resulting in the highest number of seeds per fruit (31.52 seeds), number of filled seeds (30.11 seeds), and potential seed yield of 429.81 kg ha⁻¹. The application of Boron and KNO₃ positively affected open-pollinated bitter gourd seed production, primarily through increasing the number of seeds per fruit, which subsequently contributed to higher seed yield per hectare.*

Keywords: *Momordica charantia* L., seed production, Boron fertilizer, KNO₃ fertilizer