

**THE EFFECT OF COLCHICINE CONCENTRATION ON THE
GROWTH AND YIELD OF GREEN BEANS PLANTS VARIETIES
MAXIPRO AND PERTIWI (*Phaseolus vulgaris* L.)**

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ABSTRACT

The demand for green beans is high, necessitating mutation breeding. Mutation breeding can enhance plant traits and characteristics to develop superior varieties. The objectives of this study were to examine the interaction between colchicine concentration and green bean varieties, to determine the optimal colchicine concentration, and to identify the most superior green bean variety. This research employed a factorial randomized complete block design in both field and laboratory experiments, involving two factors. The first factor was the green bean variety (Maxipro and Pertiwi), and the second was the colchicine concentration (0%, 0.05%, 0.1%, and 0.15%). The resulting data were analyzed using analysis of variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) at the 5% significance level. The results showed an interaction between variety treatment and colchicine concentration on 100-seed weight. The combination of the Pertiwi variety and 0% colchicine treatment yielded the highest 100-seed weight. The Pertiwi variety significantly shows greater germination power, vigor index, plant height at 30 and 40 days after planting, and pod length. A colchicine concentration of 0.1 can increase the number of pods per plant, pod weight per plant, pod length, number of seeds per pod, and number of stomata. The parameters measured include the number of stomata, number of pods per plant, pod weight per plant, pod length, number of seeds per pod, and weight of 100 seeds.

Keyword: cholchicine, variety, green beans