

**Induksi Poliploidi Menggunakan Kolkisin Pada Anggrek Bulan (*Phalaenopsis* sp.) Secara In Vivo. Polyploid Induction Using Colchicine on Orchid (*Phalaenopsis* sp.) In Vivo.** Supervised by Netty Ermawati, SP., Ph.D.

**Mohamad Safi'i**

*Seed Production Technique Study Program  
Agricultural Production Department*

### **ABSTRACT**

*Orchids are one of the most popular flowers in Indonesia, due to their varied shapes and colors. The demand for Phalaenopsis as ornamental flowers and cut flowers continues to increase. In line with the increasing demand for orchids, an effort is needed to improve the quality of the orchids, especially through mutation induction treatment to obtain diversity. The purpose of this study was to determine the effect of colchicine (a mutagen compound) concentration levels on morphological and physiological characters (especially stomatal organs) in the Phalaenopsis. This research was conducted from August 2022 to January 2023. This study used a completely randomized design with colchicine treatment. The treatment consisted of 5 different concentration with 4 repetitions. Treatment levels include 0 ppm (Control), K1 (30 ppm), K2 (35 ppm), K3 (40 ppm), K4 (45 ppm). Research data will be tested using the F anova test, then if it gives a significantly different effect, it will be further tested using the LSD advanced test with an error level of 5%. The results showed that 45 ppm of colchicine treatment that had a highly significant different effect on morphological characters, such as age of emergence of new leaves, plant height, number of leaves, and had a significantly different effect on leaf color parameters, whereas anatomical characters had a very significant effect on stomatal density parameters. However, the colchicine concentrations treatment had no significant effect on the parameters of leaf thickness, percentage of plant life, stomata length and stomata width. The results suggested that 45 ppm of colchicine treatment was able to induce the initial of polyploidy as indicated by the parameter of the number of stomata. the higher concentration of colchicine resulted in the lower density of stomata.*

**Keywords :** *Colchicine, Polyploid, Stomata, Orchid Phalaenopsis*