

**Induksi Poliploid di Eksplan Kentang (*Solanum tuberosum* L.) In Vitro melalui Aplikasi Kolkhisin dan Gula. *Polyploidy Induction of In Vitro Potato Explants (Solanum tuberosum L.) using Colchicine and Sugar Applications. Advisor: Netty Ermawati, S.P., Ph.D***

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**ABSTRACT**

*This study aims to determine the role of colchicine and sugar for the polyploidy induction of potato explants. The experiment was conducted at Biosain Laboratory of State Polytechnic of Jember from February to July 2018, using Factorial Randomized Block Design (RBD) with two factors and five replications. The first factor was colchicine immersion time (P) consisted of four levels, P0 = 0 hour, P1 = 6 hours, P2 = 12 hours and P3 = 24 hours. The second factor is the concentration of sugar (G) which consists of three levels, G1 = 60 g/L, G2 = 90 g/L and G3 = 120 g/L. The results showed that colchicine and sugar concentration had a significant effect on the growth of potato explants. The results showed that 12 hours of colchicine immersion was able to support the highest number of branches and stem diameter. The optimum concentration of sugar was 60 g/L, which produces a high root growth rate, number of branches and stem diameter. The optimum interaction was showed on the treatment interaction of 12 hours immersion in colchicine and additional 60 g/L sugar in the media. This treatment induce the high number of branches at potato planlet.*

**Keywords:** *Colchicine, Explants, Potatoes, Sugar.*