

**Optimization Of  $\text{NH}_4\text{NO}_3$  Concentration and Sucrose In Liquid Media  
Against In Vitro Formation of Potato Micro Tubers  
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**ABSTRACT**

The aim of this study was to obtain optimal concentrations of  $\text{NH}_4\text{NO}_3$  and sucrose to produce large micro tubers with faster tuber formation times and high wet tuber weight. This research conducted for 4 months from January to April 2019 at the Plant Tissue Culture Laboratory, Politeknik Negeri Jember. This study used a factorial completely randomized design with two factors 9 treatments and 3 replications, 3 levels of N factors, 825 mg/l, 1650 mg/l and 2475 mg/l, 3 levels of factor S, 60 grams/l, 75 gram/l and 90 gram/l with the combination treatment of N1S1, N1S2, N1S3, N2S1, N2S2, N2S3, N3S1, N3S2, N3S3. Data were analyzed using ANOVA and then tested using a 5% DMRT level. Based on the results of the study showed the best  $\text{NH}_4\text{NO}_3$  concentration for tuber current parameters and the number of tubers is 825 mg/l, and the best  $\text{NH}_4\text{NO}_3$  concentration of 1650 mg/l for plant height parameters, tuber diameter and tuber weights. For the best sucrose concentration is 60 grams/l in the number of shoot parameters and the number of books, and the best sucrose concentration for the present micro tubers is 75 grams/l. The best interaction of nitrogen and sucrose for the present parameters of micro tubers is the treatment of 825 mg / l ( $\text{NH}_4\text{NO}_3$ ) and 75 grams/l of sucrose.

**Keywords:**  $\text{NH}_4\text{NO}_3$ , Potato, Sucrose