Effect of Sucrose Concentration and Explant Type on Induction of Micro Tuber of Potato (Solanum Tuberosum) Plants In Vitro
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ABSTRACT

The attack of seed-borne diseases is one of the reasons for the low productivity of seed potatoes. Providing seed potatoes in the form of micro tubers through in vitro culture is a solution to this problem. This study aims to determine the effect of sucrose concentration and explant type on the induction of micro tubers of potato plants (Solanum tuberosum) in vitro. This research started from June to December 2024 at the Tissue Culture Laboratory, Jember State Polytechnic, using a randomized complete block design (CRD) factorial with 2 factors. The first factor is sucrose concentration (S) which consists of 3 levels, namely (S1) 90 g/L, (S2) 100 g/L, and (S3) 110 g/L. The second factor is the type of explant (N) consisting of 3 levels, namely (N1) bud, (N2) 1st node and (N3) 2nd node, each repeated 3 times. The data obtained were analyzed using analysis of variance. If there is a significant difference, the Duncan Multiple Range Test was conducted at the 5% level. The treatment of sucrose concentration and explant type had a very significant effect on all observation parameters. The best treatment interaction of sucrose concentration of 90 g/L with the type of explant shoots (S1N1) gave a very real effect on the parameters of planlet height of 17.93 cm, the number of shoots by 38.22, the number of leaves by 95.00, the number of nodes by 118.67 and the number of tubers by 1.56, and the wet weight of tubers by 0.51 grams.

Key words*: explant type, micro tubers, potato planlets and sucrose concentration*