ABSTRACT

EFFECT OF VARIOUS NITROGEN CONCENTRATION AND SUCROSE ON GROWTH AND MULTIPLICATION SHOOTS CASSAVA (*Manihot esculenta* Crantz) *IN VITRO*

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Currently, cassava has become an export commodity in the international market. Provision of high yielding varieties of cassava seeds in large quantities is a common problem faced by cassava farmers. Provision of seed-scale cassava production by tissue culture technique is considered more economical because it can produce seeds in large quantities in a relatively short time. This study aims to determine the best effect of four concentrations of nitrogen and sucrose on the growth and shoot multiplication of cassava (*Manihot esculenta* Crantz) *in vitro*.
Experiment was conducted by using a randomized complete design. The treatments were arranged in factorial (4 x 2). The first factor was the concentration of nitrogen with 0.5, 1, 1.5, 2 times the formula of Murashige and Skoog media. The second factor was 3% and 4% sucrose (30 and 40 g / l). Each treatment combination had 10 replicates, each replication consisted of one bottle containing two explants per bottle. Obtained data were analyzed based on the median value of measured variables using the standard error of the mean / SE.
The results of this study indicated that (1) 2 times the concentration of nitrogen gave the best effect on the growth of shoots and 1 times the nitrogen concentration was the best on the shoot multiplication variables including number of axillary buds and shoots of the main node in the initiation stage mean while, at the stage of subculture 1 times the nitrogen concentration MS formula was found as the best treatment on the growth and multiplication of cassava shoots in vitro, (2) concentration of 3% sucrose gave the best effect, while 4% sucrose in general tended to reduce the propagation and growth of cassava shoots in vitro and (3) a combination of 2 times the nitrogen + 30 gr / l sucrose on the initiation stage gave the best effect, whereas 1 time nitrogen + 30 g / l sucrose in the subculture stage gave the best effect on the propagation and growth of cassava shoots in vitro.

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