ABSTRACT

SOME EFFECTS OF NITROGEN AND BENZILADENIN (BA) CONCENTRATIONS ON CASSAVA (*Manihot esculenta* Crantz) MULTIPLICATION AND GROWTH *IN VITRO*

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Development of cassava *Manihot esculenta* Crantz by increasing production and high starch content cannot be separated from the procurement of new varieties that are superior than previous varieties. The current problem is the limited technique of propagation of new varieties, so it takes a relatively long time to distribute these varieties to the farmers. Therefore, plant propagation techniques are needed to produce cassava planting materials in a short time and in significant amounts, the propagation techniques that can be used is through propagation in vitro.

The purposes of this study were (1) to determine the effects of several concentrations of nitrogen on multiplication and growth of cassava plants in vitro, (2) to determine the effect of several concentrations of benziladenine on the multiplication and growth of cassava plants in vitro, (3) to find out whether benziladenine and nitrogen concentrations produced the best response on multiplication and growth of cassava in vitro.

This study consisted of 2 experiments, i.e., experiment I (initial culture) and II

(subculture). The factorial treatments were arranged by (4 x 2). The first factor was the concentration of nitrogen on MS basal medium (0.5, 1, 1.5, and 2 MS) and the second factor was the concentration of benziladenine (0.5 mg / l and 1 mg / l). Each treatment was repeated 10 times in initial culture and 15 times insubculture. The data of this experiment was analysed by using standard error of the mean.

The results of this research showed that (1) The nitrogen concentration 1 time formulation of MS was the best for the growth of cassava in vitro either in the initial culture or subculture, (2) The nitrogen concentration 2 times of the MS formulation was the best for multiplication of cassava in vitro on initial culture and 1.5 times of the MS formulation in the subculture, (3) The addition of BA at various levels of concentration did not affect either the entire variable at the initial culture or subculture, except on variable the number of main shoot leaves at the initial culture, (4) The combination of nitrogen 2 times the formulation of MS and 1 mg / l BA was the best concentration for the growth of cassava plants in vitro at the early culture and nitrogen 1 time formulation of MS with the addition of 1 mg / l BA was the best combination in the subculture.