

ABSTRACT

Guntoro, Rizky Rachmawati. 2013. **Response Sambiloto (*Andrographis paniculata* Nees) explants For Callus Formation And Growth On Media MS With The Addition of 2,4-D Combined With Coconut Water**. Thesis, Department of Biology, Faculty of Science and Technology, Islamic State University Maulana Malik Ibrahim of Malang. Counsellor of Biology : Dr. Evika Sandi Savitri M.P.. Counsellor of religion : Achmad Nachichuddin, M.A.

Keyword : 2,4-D, Coconut Water, Calli, Sambiloto (*Andrographis paniculata* Nees)

Andrographis paniculata Nees. or better known as "King of Bitter" is included in the family Acanthaceae. Active chemical compounds contained in a *Paniculata* plant also have anti-cancer properties, increases immunity, anti-viral, anti-fungal, anti-oxidant and anti-HIV. The active chemical are andrograpanin, andropanosi, andrographolit, and neoandrographolit. In vitro culture can be used as a means of producing secondary metabolites, which these compounds present in the callus. This technique has the advantage in the production of metabolites compared with intact plants due to the speed of cell growth and biosynthesis in cultures that were initiated from explants is very high and in a very short period. The research uses a combination between synthetic hormones or singly have done. Coconut water in this study is used to replace the synthetic hormone cytokinin. The combination of synthetic hormones that 2,4-D and natural hormone cytokinin derived from coconut water is expected to influence the growth of callus *Sambiloto* (*Andrographis paniculata* Nees).

This research was conducted at the Laboratory of Biology UIN Maulana Malik Ibrahim Malang in June 2013 until August 2013. The research design used was a completely randomized design (CRD) with 2 (two) factors and 3 replications. The first factor is the synthetic auxin 2,4-D at concentrations of 0 mg / l, 1 mg / l, 2 mg / l and 3 mg / l. The second factor is a naturally occurring hormone derived from coconut water with a concentration of 10%, 15% and 20%. Data obtained from this study were analyzed by analysis of variance (ANOVA) and to determine the significant difference test Duncan's Multiple Range Test (DMRT) at 5% significance level.

Results of the study showed that treatment of 2,4-D in combination with coconut water showed the influence on the growth of callus *Sambiloto* (*Andrographis paniculata* Nees). Changes occur in weight of callus. The most weight callus indicated in the treatment of 2,4-D 1 mg / l in combination with 15% coconut water when the weight of callus production of 0.08533 gram. The combination treatment is the optimal combination to induce callus *Sambiloto* (*Andrographis paniculata* Nees).