ABSTRACT

Khoriroh, Feni Dwi. 10620021. 2014. **The Influence of Cu^{2+} On MS Media by Additional 2,4-D That Combined With Coconut Water, on Contents of Secondary Metabolite *Asiaticoside* and *Madecasoside* of Callus Pegagan *(Centella asiatica* L. Urban)**.Thesis. Biology Department, Science and Technology Faculty, Maulana Malik Ibrahim State Islamic University of Malang. Supervisor: Dr.Evika Sandi Savitri,M.P and Andik Wijayanto,M.Si.

Keywords : Cu^{2+}, *Asiaticoside*, *Madecasoside*, Pegagan (*Centella asiatica* L.Urban)

Pegagan (Centella Asiatica l. Urban) is a wild plant that grows in the field, orchards, roadsides and lawns. Pegagan is widely used as a medicine. Traditional medicine and modern medicine. Benefits of pegagan are as medicine of burns, as an analgesic, antiseptic, stimulates blood circulation, improve memory and restore the back scar. Were due to the presence of some benefits in pegagan, there are secondary metabolite content, namely *asiaticoside* and *madecasoside*. Method that was used to improve content of secondary metabolites is tissue culture and elicitation by administering Cu^{2+}. Granted of Cu^{2+} led to happen grasping so production of secondary metabolites increase as efforts of self defense, Cu^{2+} also acts as enzyme cofactor that acts directly in formation of *asiaticoside* and *madecasoside* compound in pegagan. The purpose of this research is to know the *asiaticoside* and *madecasoside* callus pegagan compound.

This research carried out in a laboratory of biology tissue culture Maulana Malik Ibrahim State Islamic University of Malang in May-July 2014. Rancangan Acak Lengkap (RAL) is used in this research with four treatments and four replicates. Treatment of Cu^{2+} concentration i.e. 0 µM(Control), 30µM, 35µM and 40µM. Observation data are in form of qualitative and quantitative. Qualitative Data include callus morphology (kalus color and texture). Quantitative Data include heavy of callus *asiaticoside* and *madecasoside* levels were analyzed using *One Way* ANOVA statistical test and to determine significant differences continued test *Duncan Multiple Range Test* (DMRT) with 5% significance level.

Result of this research shows that Cu^{2+} affect on callus pegagan colour, which transforms into more concentrated callus to be Brown. Callus in texture, Cu^{2+} is affect on kalus texture so all textures have texture intermediate. Whereas, in heavy of callus, granting some Cu^{2+} concentrations has no real effect on heavy , but over all there was increasing in callus heavy compared initial weight. For increasing of secondary metabolite of *Asiaticoside* and *Madecasoside* pegagan kalus, administering Cu^{2+} with 40µM had secondary metabolite contents highest i.e. 4.1595 g/100g and 4.7185 g/100g.