

ABSTRACT

Lestari, Sri. 08620043. 2013. **The Effect explants and concentration IBA (*Indole Butyric Acid*) of Growth and Secondary Metabolite Levels (Stigmasterol and Sitosterol) Callus Purwoceng (*Pimpinella alpine* Molk.) In the media MS.** Thesis, Biology Department, Science and Technology Faculty of Maulana Malik Ibrahim State Islamic University of Malang. Supervisors: Dr. Evika Sandi Savitri, MP. and Dr. H. Ahmad Barizi, MA.

Key Words: IBA (*Indole Butyric Acid*), Callus, Purwoceng (*Pimpinella alpine* Molk.), Sitosterol, Stigmasterol

Purwoceng (*Pimpinella alpine* Molk.) Is a Indonesian medicinal plant that has efficacy as an aphrodisiac, diuretic and tonic. The existence of this plant has been considered rare and endangered. Tissue culture techniques can be used as an alternative means of propagation and secondary metabolite production. In this study, plant growth regulators IBA (*Indole Butyric Acid*) is used in the media MS for callus induction and increasing levels of secondary metabolites such as stigmasterol and sitosterol. Intention of this research to know influence of type of explants and concentration IBA of growth and secondary metabolite levels (stigmasterol and sitosterol) callus Purwoceng (*Pimpinella alpine* Molk.) In the media MS.

This study included in the experimental with complete random device (RAL) factorial, treatment in the form of type explants and IBA concentration. Explants are in the form of leaf and petiol while IBA concentrations used were 0 mg/l, 3 mg/l, 5 mg/l and 7 mg/l. Test levels of stigmasterol and sitosterol were performed by using column chromatography. Observational data in the form of qualitative data (visual observation including day appeared callus, callus morphology and percentage of callus) and quantitative (callus weight, levels of sitosterol and stigmasterol). Qualitative data were analyzed by using descriptive analysis while quantitative data were analyzed by ANOVA (analysis of variance) 2 way, if there is influence have continued with DMRT 5%.

The results of research showed that there are real influence of type explant and IBA concentrations of growth and secondary metabolite levels (stigmasterol and sitosterol) callus Purwoceng. Leaf explants with treatment IBA 3 mg/l was the best treatment which produces the fastest growth 10 hst has emerged callus chromatic yellowish green with a compact texture, and the highest percentage of callus growth on leaves 88.9% and petioles 100%. The highest callus weight produced is 0.157 grams for the leaves and petiole 0.103 grams. Leaf explants on IBA 3 mg/l produced the highest levels of stigmasterol and sitosterol. That is 1242.9 and 2079.42 ppm ppm, while petiole explants stigmasterol 897,69 ppm and sitosterol 1225,6 ppm.