

ENHANCING GROWTH AND ALOIN PRODUCTION OF *ALOE VERA* L. PLANTLETS BY SUCROSE AND YEAST EXTRACT ELICITOR DOSAGES

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ABSTRACT

The *Aloe vera* L. is an important plant to be cultivated due to aloin content and useful as antiinflammatory, antidiabetic and anticholesterol. The research aimed to enhance the growth, and aloin production of *Aloe vera* through elicitation which has been conducted in the Agriculture Faculty Laboratory of Sarjanawiyata Tamansiswa University and Integrated Research and Testing Laboratory of Gadjah Mada University. The experiment was arranged with Completely Randomized Design (CRD) factorial with three replications. The first factor was sucrose dosages consisting of four levels, namely 0; 1.5; 3.0 and 4.5 % media. The second factor was yeast extract dosages consisting of four levels namely 0; 100; 200 and 300 ppm media. Growth age, viability, leaf area, fresh weight and dry weight of plantlets were measured 2 months after cultivation. Concentration of aloin was analysed with TLC methods. Variance analysis of all data were tested by using anova analysis α 5 % and followed by Duncan's Multiple Range Test at significant level of 5% of there was significantly different in variance. Analysis of correlation was calculated between dry weight and aloin production of plantlets. The results showed that there were interactions of sucrose and yeast extract dosage source on the dry weight, aloin concentration and production, and there were no interactions on growth age, viability, leaf area and fresh weight of plantlets. The combination of without yeast extract and 4.5% sucrose gave the highest plantlet dry weight. The highest aloin concentration was obtained in no yeast extract and sucrose treatment and in no yeast extract combined with 4.5% sucrose. The highest aloin production in the plantlet were obtained in no yeast extract and 4.5% sucrose added in the medium induction, it was capable of enhancing 1.39 fold the aloin concentration compared with given sucrose 3.0% dosage. There were low correlation between fresh weight and dry weight, aloin concentration and aloin production. There was a high correlation between aloin concentration and production of plantlets.

KEYWORDS: Aloin, Elicitation, Growth, Sucrose, Yeast Extract