

Effect of BAP with Red-blue and White LED Light on In Vitro Shoot Multiplication of Stevia (*Stevia rebaudiana B.*)

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ABSTRACT

The purpose of this research activity Effect of BAP with Red-blue and white LED light on in vitro shoot multiplication of Stevia (*Stevia rebaudiana B.*) was to know the optimal concentration of BAP, the effect of red-blue and white LED lighting, the effect of combination concentration of BAP and red-blue and white LED lighting on in vitro shoot multiplication of Stevia (*Stevia rebaudiana B.*). This research activity was carried out from October 2019 to February 2020, at the Jember State Polytechnic Plant Tissue Isolation Method Laboratory. The design used in this study was a Factorial Completely Randomized Design (CRD) consisting of 2 treatments. The first treatment of 3 levels of BAP (2 ppm; 3 ppm; 4 ppm). The second treatment consisted of LED lighting (Red, blue; white). So there are 6 treatment combinations, namely B1L1 = MS + IAA 0,25 ppm + BAP 2 ppm + Red-blue LED light ; B1L2 = MS + IAA 0,25 ppm + BAP 2 ppm + White light ; B2L1= MS + IAA 0,25 ppm + BAP 3 ppm + Red-blue LED light ; B2L2 = MS + IAA 0,25 ppm + BAP 3 ppm + White light ; B3L1 = MS + IAA 0,25 ppm + BAP 4 ppm + Red-blue LED light ; B3L2 = MS + IAA 0,25 ppm + BAP 4 ppm + White light. Each treatment consisted of 5 replications so that there were 30 experimental units and each unit was repeated with 2 replications. So that it is found that 1 unit consists of 2 bottles and 1 bottle contains 1 explant. The results of this research activity were that the parameters when the shoots grew were very significantly different in the single factor of BAP and a single factor of red-blue and white LED light. The sum of shoots parameters was very significantly different just in the single factor of BAP while the high parameters shoots were significantly different in the single factor of BAP and combination of BAP and red-blue and white LED light. The sum of leaves parameters was very significantly different in the single factor of red-blue and white LED light and a combination of BAP and red-blue and white LED light.

Keywords : *Stevia, BAP, LED Light, In Vitro*