

**EFFECTIVENESS OF 2,4-D AND BAP COMPOUND CONCENTRATION  
ON BUD INDUCTION IN VANILLY (*Vanilla planifolia* Bertoni) IN VITRO**

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**ABSTRACT**

*Vanilla (Vanilla planifolia Bertoni) is a plantation crop that uses parts of the fruit and is processed as a mixture of food fragrance or perfume. Indonesia is ranked 3rd as the world's largest exporter after Madagascar and France. Stem rot is an obstacle faced by farmers in vegetative propagation through cuttings because the wounds resulting from the cuttings cause roots not to appear; one of the efforts to solve the problem is through tissue culture propagation methods. Tissue culture has the advantage of producing plants that have the same properties as the parent plant, in large quantities, not dependent on the season, free from pests and diseases. This research was carried out from October 2024 at the Jember State Polytechnic Tissue Culture Laboratory. The experimental design used in this research was RAL (Completely Randomized Design) Factorial using 2 factors. The first factor 2,4-D (D) with concentrations of 1 ppm (D1); 1.5 ppm (D2); and 2 ppm (D3 ); and the second factor BAP (B) with concentrations of 0.5 ppm (B1); 1 ppm (B2); and 1.5 (B3); This research was conducted with 9 treatment combinations, 3 replications, and 3 samples. Observation parameters in the study included shoot initiation, shoot height, and percentage of live explants. The results showed that the 2,4-D compound had no significant effect on the observation parameters of shoot initiation and percentage of live explants. While the observation parameter of shoot height gave a very significant effect. The administration of the BAP compound had no significant effect on the observation parameters of shoot initiation, shoot height and percentage of live explants. The administration of the 2,4-D and BAP compounds gave very significant results on the observation parameters of shoot initiation and shoot height, while the parameter of percentage of live explants gave no significant results.*

**Keywords:** *Vanilla, In Vitro , 2,4-D, BAP, Shoot Induction*