THE EFFECT OF NAA (Naphthaleneacetic Acid) AND KINETIN ON CALLUS INDUCTION OF TOBACCO (Nicotiana tabacum L.) VARIETY H-382 IN VITRO

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ABSTRACT

Tobacco (Nicotiana tabacum L.) variety H-382 is one of the Besuki Na-Oogst varieties that has high economic value. Efforts to improve the quality and uniformity of tobacco seeds require effective propagation techniques, one of which is through in vitro tissue culture. The success of callus induction is greatly influenced by the type and concentration of plant growth regulators (PGRs), especially auxin and cytokinin. This study aims to determine the effect of NAA (Naphthaleneacetic Acid), kinetin, and a combination of both on in vitro callus induction of H-382 tobacco variety. The study was conducted from March to May 2025 at the Plant Tissue Culture Laboratory of Jember State Polytechnic using a Completely Randomized Factorial Design (CRFD) with two factors, namely NAA (0 ppm, 0.5 ppm, and 1 ppm) and kinetin (0 ppm, 1 ppm, 2 ppm, 3 ppm, and 4 ppm). The observed parameters included callus maturity, callus color, callus structure, and callus fresh weight. Data were analyzed using ANOVA and the DMRT test at the 5% level. The results showed that NAA, kinetin, and their combination significantly affected all observed parameters. The combination of 0.5 ppm NAA and 4 ppm kinetin provided the best results for in vitro callus induction and growth of H-382 tobacco variety.

Keywords*: tobacco H-382, tissue culture, NAA, kinetin, callus*