

Application Of Various Concentrations of MS(Murashige and Skoog) Media and BAP(Benzyl Amino Purin) On Multiplication Growth of Cavendish Banana (Musa Acuminata L) Varieties Grand Naine
Supervised by Dr. Ir. Rahmat Ali Syaban, M.Si

Belza Faizatul Magfiroh
Study Program of Seed Production Technique
Majoring of Agricultural Production

ABSTRACT

This study aimed to determine the effect of MS media concentration and BAP cytokinin on the multiplication growth of Cavendish banana (Musa acuminata L.) varieties Grand Naine through in vitro culture. The research was conducted from June to September 2025 at the Tissue Culture Laboratory of Politeknik Negeri Jember using a Completely Randomized Design (CRD) factorial with two factors — MS media concentration (25%, 50%, 75%) and BAP concentration (2, 3, 4 ppm) — resulting in 9 treatment combinations with 3 replications. Parameters observed included root earliness, number of shoots, number of leaves, explant height, and percentage of living explants. Results showed that MS media concentration significantly affected root earliness and had highly significant effects on shoot and leaf numbers. BAP concentration had highly significant effects on shoot and leaf numbers but no significant effect on root earliness, explant height, and survival percentage. The interaction between MS media and BAP significantly affected shoot number, leaf number, and explant height. The best combination was 50% MS + 2 ppm BAP (M2B1), producing the highest shoot count (3.78 shoots) and leaf count (5.44 leaves), while 25% MS + 3 ppm BAP (M1B2) yielded the fastest root formation (15.8 days). Overall explant survival reached 79%.

Keywords: *Cavendish banana, MS media, BAP, in vitro multiplication, tissue culture*