ABSTRAK

Fathimah Azzahra.2025. Efektivitas BAP (*Benzyl Amino Purine)* pada Media *Murashige & Skoog* (MS) dan Pupuk Daun terhadap Multiplikasi Tunas Pisang Cavendish (*Musa acuminata*) secara *in Vitro.* Dibawah bimbingan Liberty Chaidir dan Ahmad Taofik.

Pisang Cavendish (Musa acuminata) merupakan varietas unggulan dengan nilai ekonomi tinggi, baik untuk konsumsi domestik maupun ekspor. Namun, keterbatasan produksi akibat sifat sterilitas genetik dan kerentanan penyakit memerlukan alternatif perbanyakan yang efisien. Kultur in vitro menjadi solusi menjanjikan karena mampu menghasilkan bibit dalam jumlah besar, seragam, dan bebas penyakit. Tujuan penelitian adalah untuk mengevaluasi konsentrasi optimal BAP terhadap jumlah tunas pisang Cavendish pada media MS dan Pupuk Daun secara in vitro. Penelitian dilakukan menggunakan Rancangan Acak Lengkap (RAL) dengan 10 perlakuan dan 3 ulangan, memanfaatkan dua jenis media (MS dan pupuk daun 1,25 g/L) dengan tambahan air kelapa 20% dan variasi konsentrasi BAP (0–4 mg/L). Hasil menunjukkan bahwa kombinasi media MS atau pupuk daun dengan BAP 2 mg/L dan air kelapa 20% mampu mempercepat waktu muncul tunas (hari ke-4) dan meningkatkan jumlah tunas secara signifikan. Media MS umumnya menunjukkan waktu muncul akar lebih cepat dibanding media pupuk daun. Namun, kombinasi pupuk daun + air kelapa + BAP tetap efektif selama menggunakan dosis hormon tepat dan kondisi lingkungan kultur terjaga. BAP memiliki pengaruh nyata terhadap multiplikasi tunas pisang Cavendish, dengan konsentrasi optimal pada kisaran 2–3 mg/L. Media pupuk daun + air kelapa dapat menjadi alternatif ekonomis yang efektif menggantikan media MS dalam perbanyakan in vitro apabila dikombinasikan dengan BAP secara tepat.

Kata kunci: BAP, kultur *in vitro*, media alternatif, pisang Cavendish

ABSTRACT

Fathimah Azzahra. 2025. Effectiveness of (BAP) Benzyl Amino Purine on Murashige & Skoog (MS) and Foliar Fertilizer Media on the In Vitro Shoot Multiplication of Cavendish Banana (Musa acuminata). Supervised by Liberty Chaidir and Ahmad Taofik.

Cavendish banana (*Musa acuminata*) is a superior variety with high economic value, both for domestic consumption and export. However, production constraints due to genetic sterility and disease susceptibility require an efficient propagation alternative. In vitro culture offers a promising solution, as it enables the mass production of uniform and disease-free seedlings. This study aimed to evaluate the optimal concentration of BAP on the shoot multiplication of Cavendish banana using MS and foliar fertilizer media under in vitro conditions. The experiment was arranged in a Completely Randomized Design (CRD) with 10 treatments and 3 replications, utilizing two types of media (MS and foliar fertilizer at 1.25 g/L) supplemented with 20% coconut water and varying concentrations of BAP (0–4 mg/L). The results showed that the combination of MS or foliar fertilizer media with 2 mg/L BAP and 20% coconut water significantly accelerated the appearance of shoots (on the 4th day) and increased the number of shoots. MS media generally showed faster root initiation compared to foliar fertilizer media. However, the combination of foliar fertilizer + coconut water + BAP remained effective, provided that the hormone dosage was appropriate and the culture conditions were well maintained. BAP had a significant effect on the shoot multiplication of Cavendish banana, with an optimal concentration in the range of 2–3 mg/L. Foliar fertilizer media supplemented with coconut water may serve as an effective and economical alternative to MS media in in vitro propagation when combined with BAP appropriately.

Keyword: BAP, Cavendish banana, in vitro culture, media alternative