RINGKASAN

Pisang kepok kuning (*Musa acuminata* × *balbisiana,* ABB Group) merupakan salah satu varietas pisang unggulan Indonesia karena pemanfaatannya yang luas dalam industri pengolahan pangan, seperti produksi keripik pisang, pisang salai, serta tepung pisang. Namun demikian, produksinya masih menghadapi berbagai kendala, terutama keterbatasan ketersediaan bibit yang sehat serta serangan beberapa penyakit penting. Penyakit tersebut antara lain penyakit Panama yang disebabkan oleh jamur *Fusarium*, penyakit darah akibat infeksi bakteri *Ralstonia syzygii* subsp. *celebesensis*, serta penyakit Moko yang tergolong sebagai *bacterial wilt*. Perbanyakan pisang secara konvensional relatif lama dan menghasilkan bibit yang tidak seragam serta rentan menyebarkan penyakit. Permasalahan keterbatasan bibit dapat diatasi melalui pemanfaatan teknik kultur tanaman secara *in vitro* dengan pemberian zat pengatur tumbuh, khususnya sitokinin dan auksin. Oleh karena itu, penelitian ini dilakukan untuk mengevaluasi interaksi antara *6-Benzylaminopurine* (BAP) dan *Indole-3-acetic acid* (IAA) terhadap perkembangan tunas mikro pisang kepok kuning pada sistem kultur *in vitro*, sekaligus menentukan kombinasi konsentrasi kedua ZPT tersebut yang paling optimal dalam mendukung pertumbuhan tunas mikro.

Penelitian ini menggunakan metode eksperimen dengan Rancangan Acak Lengkap (RAL) yang disusun dalam pola perlakuan faktorial dua faktor. Faktor pertama berupa konsentrasi BAP yang terdiri atas empat taraf, yaitu 0, 4, 13, dan 27 µM, sedangkan faktor kedua adalah konsentrasi IAA dengan empat taraf, yaitu 0, 3, 6, dan 11 µM. Setiap kombinasi kedua faktor diulang tiga kali sehingga total unit percobaan menjadi 48. Dalam penelitian ini, BAP dan IAA ditetapkan sebagai variabel bebas, sedangkan variabel terikat yang diamati adalah perkembangan tunas mikro pisang kepok kuning pada kultur *in vitro*. Pengamatan dilakukan melalui beberapa parameter, yaitu jumlah tunas, panjang tunas, jumlah daun, serta jumlah akar. Data hasil pengamatan dianalisis dengan *Analysis of Variance* (ANOVA) pada taraf 5% dan 1%. Jika menunjukkan perbedaan nyata, analisis dilanjutkan dengan uji Duncan (DMRT) taraf 5% serta regresi. Hasil penelitian menunjukkan bahwa interaksi antara BAP dan IAA memberikan pengaruh terhadap pemanjangan tunas mikro pisang kepok kuning dalam kultur *in vitro*. Kombinasi perlakuan yang memberikan hasil terbaik terhadap peningkatan panjang tunas mikro diperoleh pada konsentrasi BAP 13 µM yang dikombinasikan dengan IAA 11 µM.

Kata kunci: BAP, IAA, In vitro, Kepok kuning, Tunas mikro.

SUMMARY

Kepok Kuning banana (*Musa acuminata* × *balbisiana*, ABB Group) is one of the important banana cultivars in Indonesia due to its extensive utilization in the food processing industry, particularly for products such as banana chips, smoked bananas, and banana flour. However, its production still faces several constraints, especially the limited availability of healthy planting materials and the occurrence of several major diseases. These include Panama disease caused by *Fusarium* fungi, blood disease resulting from infection by the bacterium *Ralstonia syzygii* subsp. *celebesensis*, and Moko disease, which is classified as a *bacterial wilt*. Conventional propagation methods require a relatively long time and often produce non-uniform planting materials that may also contribute to disease spread. One alternative to overcome the limitation of planting materials is the application of plant tissue culture techniques through *in vitro* culture with the addition of plant growth regulators, particularly cytokinins and auxins. Therefore, this study aimed to evaluate the interaction between *6-Benzylaminopurine* (BAP) and *Indole-3-acetic acid* (IAA) on the development of yellow kepok banana microshoots under *in vitro* culture conditions and to determine the most effective combination of these plant growth regulators in promoting microshoot growth.

This study was conducted using an experimental method with a Completely Randomized Design (CRD) arranged in a two-factor factorial treatment. The first factor was BAP concentration with four levels: 0, 4, 13, and 27 µM, while the second factor was IAA concentration with four levels: 0, 3, 6, and 11 µM. Each combination of the two factors was replicated three times, resulting in a total of 48 experimental units. In this study, BAP and IAA served as independent variables, while the dependent variable observed was the development of yellow kepok banana microshoots in *in vitro* culture. Observations were conducted using several parameters, including number of shoots, shoot length, number of leaves, and number of roots. Observation data were analyzed using *Analysis of Variance* (ANOVA) at the 5% and 1% significance levels. If significant differences were found, *Duncan's Multiple Range Test* (DMRT) at the 5% level and regression analysis were performed. The interaction of BAP and IAA was found to affect the elongation of yellow kepok banana microshoots cultured *in vitro*. The best treatment combination for increasing microshoot length was obtained at 13 µM BAP combined with 11 µM IAA.

Keywords: BAP, IAA, In vitro, Kepok Kuning Banana, Microshoots.