

ABSTRAK

PENGARUH KONBINASI ZAT PENGATUR TUMBUH DAN TEKNIK APLIKASINYA TERHADAP INDUKSI AKAR SETEK BATANG JAMBU BIJI (*Psidium guajava* L.) 'KRISTAL'

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Budidaya tanaman jambu biji 'Kristal' dengan setek batang memiliki persoalan yaitu akar sulit terbentuk. Pemberian zat pengatur tumbuh akan mempengaruhi proses fisiologis untuk meregenerasi sel sehingga bahan tanam dapat kembali menjadi tanaman yang sempurna. ZPT golongan auksin seperti IBA (*Indole butyric acid*) dapat merangsang inisiasi akar tanaman. Aplikasi konsentrasi IBA yang dikombinasikan dengan lama perendaman diyakini dapat mempengaruhi proses pertumbuhan akar pada setek batang jambu biji 'Kristal'. Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi IBA, lama perendaman, dan interaksi antara konsentrasi IBA dan lama perendaman terhadap induksi akar setek batang jambu biji 'Kristal'. Penelitian menggunakan Rancangan Acak Kelompok (RAK) faktorial dengan 8 perlakuan masing-masing 5 ulangan. Homogenitas data diuji dengan uji *barlett* lalu uji aditifitas dengan uji *tukey*, kemudian diuji lebih lanjut dengan uji ortogonal polinomial. Aplikasi perlakuan yaitu IBA 2000 ppm tanpa perendaman (Z_1T_0), IBA 4000 ppm tanpa perendaman (Z_2T_0), IBA 2000 ppm + direndam 60 menit (Z_1T_1), IBA 4000 ppm + direndam 60 menit (Z_2T_1), IBA 2000 ppm + direndam 120 menit (Z_1T_2), IBA 4000 ppm + direndam 120 menit (Z_2T_2), IBA 2000 ppm + direndam 180 menit (Z_1T_3), dan IBA 4000 ppm + direndam 180 menit (Z_2T_3). Hasil penelitian menunjukkan perlakuan terbaik yaitu IBA 4000 ppm + direndam 180 menit (Z_2T_3) yang berpengaruh nyata terhadap variabel jumlah akar, panjang akar, bobot segar akar, dan bobot kering akar.

Kata kunci: IBA, Jambu biji 'Kristal', Konsentrasi, Lama perendaman

ABSTRACT

EFFECT OF THE COMBINATION OF PLANT GROWTH REGULATORS AND TECHNIQUES APPLICATION ON THE INDUCTION OF GUAVA STEM CUTTINGS (*Psidium guajava* L.) 'CRYSTAL'

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The cultivation of 'Crystal' guava plants with stem cuttings is constrained by the difficulty of root formation. The physiological process of cell regeneration is affected by the application of the plant growth regulators so that the planting material can be stored into a complete plant. Root initiation of plants can be stimulated by plant growth regulators of the auxin group such as IBA (Indole butyric acid). The root growth process in 'Crystal' guava stem cuttings is believed to be influenced by the application of IBA concentrations combined with soaking time. The effect of IBA concentration, soaking time, and their interaction on the induction of 'Crystal' guava stem cutting was aimed to be determined in this study. A factorial randomized block design with 8 treatments and 5 replications was used. Homogeneity of the data was tested by Bartlett's test, followed by the additivity test using Tukey's method, and further analysis was carried out with the orthogonal polynomial test. The treatments applied were IBA 2000 ppm without immersion (Z1T0), IBA 4000 ppm without immersion (Z2T0), IBA 2000 ppm with soaking for 60 minutes (Z1T1), IBA 4000 ppm with soaking for 60 minutes (Z2T1), IBA 2000 ppm with soaking for 120 minutes (Z1T2), IBA 4000 ppm with soaking for 120 minutes (Z2T2), IBA 2000 ppm with soaking for 180 minutes (Z1T3), and IBA 4000 ppm with soaking for 180 minutes (Z2T3). The best treatment was shown by IBA 4000 ppm with soaking for 180 minutes (Z2T3), which was found to have a significant effect on the variables of root count, root length, fresh root weight, and dry root weight.

Keywords: Concentration, 'Crystal' guava, IBA, Soaking time