

ABSTRAK

Perendaman benih merupakan perlakuan pra-perkecambahan yang efektif untuk mempercepat dan meningkatkan keberhasilan perkecambahan dan pertumbuhan bibit tanaman sehingga diharapkan menghasilkan kualitas bibit yang bagus. Tujuan penelitian ini untuk mengetahui perlakuan kombinasi jenis bahan dan lama perendaman benih terhadap pertumbuhan bibit tanaman pepaya (*Carica papaya* L.). Metode penelitian menggunakan rancangan acak lengkap non faktorial dengan perlakuan jenis bahan (air, giberelin 80 ppm, KNO_3 15%) dan lama perendaman (12 dan 24 jam) serta tanpa perendaman sehingga terdapat 7 kombinasi perlakuan. Data yang diperoleh dianalisis menggunakan Analysis of Variance (5%) dan uji Duncan's Multiple Range Test (5%). Berdasarkan hasil penelitian menunjukkan bahwa perbedaan jenis bahan dan lama perendaman benih pepaya memberikan pengaruh nyata terhadap pertumbuhan bibit yaitu parameter tinggi bibit, panjang akar, luas daun, dan bobot basah bibit tanaman pepaya, serta tidak berpengaruh nyata terhadap persentase daya kecambah, kecepatan berkecambah, jumlah daun, diameter batang, dan bobot kering bibit tanaman. Perlakuan perendaman dalam giberelin 80 ppm selama 24 jam memberikan pengaruh terbaik dibandingkan perlakuan lainnya, namun tidak berbeda nyata dengan perendaman KNO_3 15% selama 24 jam pada parameter tinggi bibit tanaman. Sedangkan perlakuan tanpa perendaman menghasilkan pertumbuhan bibit yang terendah.

Kata Kunci: Benih Pepaya, Giberelin, KNO_3 , Lama Perendaman, Pertumbuhan

ABSTRACT

Seed soaking is an effective pre-germination treatment to accelerate and improve germination success and seedling growth, thereby producing high-quality seedlings. The objective of this study was to determine the effects of a combination of treatment types and seed soaking duration on the growth of papaya (*Carica papaya* L.) seedlings. The research method used a non-factorial completely randomized design with treatments of material type (water, gibberellin 80 ppm, KNO₃ 15%) and soaking duration (12 and 24 hours), as well as no soaking, resulting in 7 treatment combinations. The data obtained were analyzed using Analysis of Variance (5%) and Duncan's Multiple Range Test (5%). The results indicated that differences in treatment type and soaking duration significantly affected seedling growth parameters, including seedling height, root length, leaf area, and fresh weight of papaya seedlings, but did not significantly affect germination percentage, germination rate, number of leaves, stem diameter, and dry weight of seedlings. Soaking in 80 ppm gibberellin for 24 hours yielded the best results compared to other treatments, but there was no significant difference with soaking in 15% KNO₃ for 24 hours in terms of seedling height. Meanwhile, the treatment without soaking resulted in the lowest seedling growth.

Keywords: Gibberellin, Growth, KNO₃, Papaya Seeds, Soaking Duration