

Pengaruh Konsentrasi dan Lama Perendaman Ekstrak Nanas Terhadap Pematahan Dormansi Benih Semangka Seedless (*Citrullus lanatus* L.). (*Effect of Concentration and Soaking Time of Pineapple Extract on Breaking Dormancy of Seedless Watermelon Seeds (Citrullus lanatus L.)*). Supervised by Ir. Dwi Rahmawati, S.P., M.P. IPM.

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ABSTRACT

Seedless watermelon seeds have physical dormancy problems. New alternatives are needed to overcome problems other than cracking. Efforts that can be made are the use of pineapple extract which can help the softening process. This research aims to determine the benefits of the bromelain enzyme from pineapple extract to break down the skin protein of seedless watermelon seeds, and determine the interaction between pineapple extract concentration and soaking time on breaking seed dormancy. The research was carried out from August to November 2023 at the PT Laboratory. East West Seed Indonesia (EWINDO), Jl. Basuki Rachmad No. 019, Muktisari Village, District. Tegal Besar, Kab. Jember. The experimental design used was a Factorial Completely Randomized Design (CRD) which was repeated 3 times. The first factor is the concentration of pineapple extract which consists of 25% (K1), 50% (K2), 75% (K3). The second factor is the soaking time which consists of 5 minutes (P1), 10 minutes (P2) and 15 minutes (P3). Data were analyzed using ANOVA, and continued with the DMRT test at 1% and 5% level. The research results show that the treatment factors have a real influence on their own. Concentration had a real influence on germination capacity with a value of 67.22%, RE (55.78%), KcT (12.00%), KsT (61.33%), PTM (74.85%), and vigor index (53.56%). Soaking time had a real influence on germination capacity with a value of 62.22%, RE (51.11%), KcT (11.59%), KsT (59.33%), PTM (71.56%), and vigor index. (51.33%). Meanwhile, the interaction of the two factors has a significantly different influence on RE with a value of 70.67%.

Key Words : *, Seedless watermelon seeds, dormancy, pineapple extract, bromelain enzyme*

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ABSTRAK

Benih semangka seedless memiliki permasalahan dormansi fisik. Diperlukan alternatif baru untuk mengatasi permasalahan selain dengan cara cracking. Upaya yang dapat dilakukan yaitu pemanfaatan ekstrak nanas yang dapat membantu proses pelunakan. Penelitian ini bertujuan untuk mengetahui manfaat enzim bromelin dari ekstrak nanas untuk memecahkan protein kulit benih semangka seedless, dan mengetahui interaksi antara konsentrasi ekstrak nanas dan lama perendaman terhadap pematahan dormansi benih. Penelitian dilaksanakan pada bulan Agustus hingga November 2023 di Laboratorium PT. East West Seed Indonesia (EWINDO), Jl. Basuki Rachmad No. 019, Desa Muktisari, Kec. Tegal Besar, Kab. Jember. Rancangan percobaan yang digunakan adalah Rancangan Acak Lengkap (RAL) Faktorial yang diulang sebanyak 3 kali. Faktor pertama adalah konsentrasi ekstrak nanas yang terdiri dari 25% (K₁), 50% (K₂), 75% (K₃). Faktor kedua adalah lama perendaman yang terdiri dari 5 menit (P₁), 10 menit (P₂) dan 15 menit (P₃). Data dianalisis menggunakan ANOVA, dan dilanjutkan dengan uji DMRT taraf 1% dan 5%. Hasil penelitian menunjukkan bahwa faktor perlakuan memberikan pengaruh nyata secara sendiri-sendiri. Konsentrasi memberikan pengaruh nyata terhadap daya berkecambah dengan nilai 67,22%, RE (55,78%), KcT (12,00%), KsT (61,33%), PTM (74,85%), dan indek vigor (53,56%). Lama perendaman memberikan pengaruh nyata terhadap daya berkecambah dengan nilai 62,22%, RE (51,11%), KcT (11,59%), KsT (59,33%), PTM (71,56%), dan indek vigor (51,33%). Sedangkan interaksi kedua faktor memberikan pengaruh berbeda nyata terhadap RE dengan nilai 70,67%.

Kata Kunci : Benih semangka seedless, dormansi, ekstrak nanas, enzim bromelin