

ABSTRAK

PENGARUH KOMBINASI PERENDAMAN DALAM AIR PANAS DAN ZAT PENGATUR TUMBUH ALAMI TERHADAP VIABILITAS BENIH DELIMA MERAH (*Punica granatum L.*)

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Tanaman delima merah (*Punica granatum L.*) memiliki potensi ekonomi dan kesehatan yang tinggi, namun perbanyakannya secara generatif sering terhambat oleh dormansi benih akibat struktur kulit biji yang keras. Dormansi tersebut menyebabkan rendahnya viabilitas dan lambatnya proses perkecambahan, sehingga diperlukan perlakuan khusus untuk mematahkannya. Penelitian ini bertujuan untuk mengetahui pengaruh kombinasi perendaman dalam air panas dan zat pengatur tumbuh (ZPT) alami terhadap viabilitas benih delima merah serta menentukan kombinasi perlakuan terbaik. Penelitian dilaksanakan di Laboratorium dan Greenhouse BTPH Wilayah V Tasikmalaya pada Januari–Februari 2026 menggunakan metode eksperimen dengan Rancangan Acak Lengkap (RAL). Perlakuan terdiri atas tujuh kombinasi, yaitu tanpa perlakuan (kontrol), perendaman air panas, perendaman ekstrak bawang merah 50%, perendaman air kelapa muda 50%, serta kombinasi keduanya dengan empat ulangan. Data dianalisis menggunakan uji F pada taraf 5% dan dilanjutkan dengan Uji Jarak Berganda Duncan apabila terdapat perbedaan nyata. Hasil penelitian menunjukkan bahwa kombinasi skarifikasi perendaman air panas dan perendaman air kelapa muda 50% memberikan hasil terbaik terhadap seluruh parameter viabilitas. Perlakuan tersebut menghasilkan daya kecambah tertinggi sebesar 69%, kecepatan berkecambah 4,28%/etmal, panjang plumula 11,18 cm, dan panjang radikula 40,33 cm. Peningkatan ini diduga terjadi karena perlakuan air panas mampu melunakkan kulit benih dan mempercepat imbibisi, sedangkan kandungan hormon auksin, sitokinin, dan giberelin dalam air kelapa muda merangsang aktivitas metabolisme serta pertumbuhan embrio.

Kata kunci: delima merah, dormansi, viabilitas benih, zat pengatur tumbuh alami

ABSTRACT

THE EFFECT OF COMBINING HOT WATER SOAKING AND NATURAL PLANT GROWTH REGULATORS ON THE VIABILITY OF RED POMEGRANATE (*Punica granatum L.*) SEEDS

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Red pomegranate (*Punica granatum L.*) has high economic and medicinal value; however, its generative propagation is often constrained by seed dormancy caused by a hard seed coat structure. This dormancy results in low viability and slow germination, thus requiring specific treatments to break it. This study aimed to determine the effect of combining hot water soaking and natural plant growth regulators (PGRs) on the viability of red pomegranate seeds and to identify the most effective treatment combination. The research was conducted at the Laboratory and Greenhouse of BTPH Region V Tasikmalaya from January to February 2026 using an experimental method with a Completely Randomized Design (CRD). The treatments consisted of seven combinations: untreated control, hot water soaking, 50% shallot extract soaking, 50% young coconut water soaking, and their combinations, with four replications. Data were analyzed using an F-test at the 5% significance level, followed by Duncan's Multiple Range Test when significant differences were observed. The results showed that the combination of hot water scarification and 50% young coconut water soaking produced the best results across all viability parameters. This treatment resulted in the highest germination percentage (69%), germination rate (4,28% per etmal), plumule length (11,18 cm), and radicle length (40,33 cm). The improvement is attributed to hot water treatment softening the seed coat and enhancing imbibition, while the auxin, cytokinin, and gibberellin hormones in young coconut water stimulated metabolic activity and embryo growth.

Keywords: dormancy, natural plant growth regulators, red pomegranate, seed viability