ABSTRAK

PENGARUH LAMA SIMPAN PADA VIABILITAS BENIH SORGUM VARIETAS SURI YANG DIPANEN DARI PERTANAMAN YANG DIAPLIKASI $ZnSO_4$ PADA FASE TUMBUH BERBEDA

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Sorgum (*Sorghum bicolor* [L.] Moench) adalah komoditas pangan potensial di lahan marginal. Viabilitas benih cenderung menurun selama penyimpanan. Aplikasi zinc ($ZnSO_4$) pada fase tertentu diduga meningkatkan kandungan Zn dalam benih, mengaktifkan enzim antioksidan Cu-Zn-SOD, sehingga memperlambat kemunduran benih. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi $ZnSO_4$ pada fase tumbuh berbeda, pengaruh lama simpan, serta interaksinya terhadap viabilitas benih sorgum varietas Suri. Penelitian dilaksanakan di Laboratorium Benih dan Pemuliaan Tanaman, Fakultas Pertanian, Universitas Lampung, Desember 2024-Desember 2025. Percobaan menggunakan Rancangan Acak Kelompok Lengkap (RAKL) pola *Split-Plot in Time* dengan 4 ulangan. Faktor pertama adalah fase aplikasi $ZnSO_4$ (kontrol, fase vegetatif, fase generatif) dan faktor kedua adalah lama simpan (0, 2, 4, 6, 8, 10, 12 bulan) pada suhu ruang 27,9 ±0,5°C. Hasil penelitian menunjukkan bahwa aplikasi $ZnSO_4$ pada fase generatif memberikan viabilitas terbaik dengan kecepatan perkecambahan tertinggi (20,66%/hari) dan kecambah normal total tertinggi (64,57%). Lama simpan berpengaruh sangat nyata terhadap seluruh variabel, dengan viabilitas tinggi pada 0-6 bulan, menurun drastis pada 8 bulan dan 12 bulan. Terdapat pengaruh interaksi nyata antara aplikasi $ZnSO_4$ dan lama simpan, di mana p3 menunjukkan kemunduran paling lambat pada periode kritis 6 bulan.

Kata kunci: sorgum, $ZnSO_4$, lama simpan, viabilitas benih

ABSTRACT

EFFECT OF STORAGE DURATION ON SEED VIABILITY OF SURI SORGHUM VARIETY HARVESTED FROM CROPS APPLIED $ZnSO_4$ AT DIFFERENT GROWTH STAGES

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Sorghum (*Sorghum bicolor* [L.] Moench) is a potential food crop for marginal lands. Seed viability tends to decline during storage. Zinc ($ZnSO_4$) application at specific growth stages is hypothesized to increase seed Zn content, activating the antioxidant enzyme Cu-Zn-SOD to protect embryo cell membrane integrity and slow seed deterioration. This study aimed to determine the effect of $ZnSO_4$ application at different growth stages, storage duration, and their interaction on seed viability of Suri sorghum. The research was conducted at the Seed and Plant Breeding Laboratory, Faculty of Agriculture, University of Lampung, from December 2024 to December 2025. A Randomized Complete Block Design (RCBD) in a Split-Plot in Time arrangement with 4 replications was used. The first factor was $ZnSO_4$ application stage (control, vegetative, generative) and the second was storage duration (0, 2, 4, 6, 8, 10, 12 months) at room temperature of 27.9 ±0.5°C. Results showed that $ZnSO_4$ application at the generative phase yielded the best seed viability, with the highest germination rate (20.66%/day) and total normal germination (64.57%). Storage duration significantly affected all observed variables: viability remained high from 0-6 months, declined sharply at 8 months and 12 months. A significant interaction was found between $ZnSO_4$ application and storage duration, with p3 showing the slowest deterioration during the critical 6 month period.

Keywords*:* sorghum, $ZnSO_4$, storage duration, seed viability