## ABSTRAK

**PENGARUH PENUNDAAN WAKTU TANAM TERHADAP FENOLOGI, PERTUMBUHAN, DAN PRODUKSI TANAMAN KEDELAI (*Glycine max* L.) DI DATARAN TINGGI: STUDI ADAPTASI TANAMAN TERHADAP PERUBAHAN IKLIM**

**Oleh**

**SYIFA KARLIN**

Perubahan iklim global, terutama peningkatan suhu dan ketidakpastian curah hujan, memengaruhi fenologi, pertumbuhan, dan produksi tanaman, termasuk kedelai (Glycine max L.). Penelitian ini bertujuan untuk mengkaji pengaruh penundaan waktu tanam terhadap fenologi, nilai Growing Degree Days (GDD), pertumbuhan, dan produksi tiga varietas kedelai (Grobogan, Dena 1, dan Deja 2) di dataran tinggi serta melihat peran bahan organik dalam mengatasi stres lingkungan. Penelitian dilaksanakan pada Februari–Juni 2025 di UPTD Balai Benih Induk Hortikultura, Sekincau, Lampung Barat (1100 m dpl) menggunakan Rancangan Acak Kelompok (RAK) dengan pola strip plot. Hasil penelitian menunjukkan bahwa penundaan waktu tanam memengaruhi tahapan fenologi, nilai GDD, dan hasil produksi tanaman. Terdapat perbedaan nyata antar varietas dalam respons terhadap suhu dataran tinggi. Pemberian bahan organik (pupuk kandang ayam) berpengaruh dalam meningkatkan pertumbuhan vegetatif dan hasil produksi. Varietas Grobogan dan Deja 2 menunjukkan adaptasi yang lebih baik dibanding Dena 1, dengan nilai GDD yang lebih optimal untuk mencapai fase generatif dan menghasilkan bobot brangkasan serta biji yang lebih tinggi. Penelitian ini merekomendasikan pemilihan varietas toleran serta penyesuaian waktu tanam dan pemanfaatan bahan organik sebagai strategi adaptasi terhadap perubahan iklim di dataran tinggi.



Kata kunci: kedelai, fenologi, perubahan iklim, dataran tinggi, growing degree days, bahan organik.

*ABSTRACT*

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Global climate change, particularly rising temperatures and uncertain rainfall patterns, has significant impacts on the phenology, growth, and productivity of crops, including soybean (Glycine max L.). This study aimed to evaluate the effects of delayed planting time on phenology, accumulated Growing Degree Days (GDD), growth, and yield performance of three soybean varieties (Grobogan, Dena 1, and Deja 2) in highland environments. In addition, the study examined the role of organic matter in mitigating environmental stress caused by climatic variability. The experiment was conducted from February to June 2025 at the UPTD Balai Benih Induk Hortikultura, Sekincau, West Lampung, at an altitude of 1100 m above sea level. A Randomized Complete Block Design (RCBD) with a strip plot arrangement was employed. Results showed that delayed planting significantly influenced phenological stages, GDD accumulation, and soybean yield. Significant differences among varieties were observed in their adaptive responses to highland temperatures. The application of organic matter in the form of poultry manure enhanced vegetative growth as well as seed yield. Grobogan and Deja 2 varieties demonstrated better adaptability compared to Dena 1, as indicated by more optimal GDD utilization to reach the generative phase and higher biomass and seed weight production. These findings suggest that selecting tolerant varieties, adjusting planting schedules, and applying organic amendments are effective adaptation strategies to cope with climate change in highland areas.

Keywords: soybean, phenology, climate change, highland, growing degree days, organic matter.