

ABSTRAK

PENGARUH KONSENTRASI PUPUK ORGANIK CAIR CANGKANG SALAK (*Salacca zalacca*) DAN LIMBAH CAIR TAHU TERHADAP PERTUMBUHAN DAN HASIL BAYAM MERAH (*Amaranthus tricolor* L.)

Oleh:

Muhammad Zulfikar
NPM 195001003

Dosen Pembimbing :
Maman Suryaman
Elya Hartini

Penggunaan pupuk kimia secara berlebihan dalam pertanian dapat menurunkan kesuburan tanah serta berdampak negatif terhadap lingkungan, sehingga diperlukan alternatif yang ramah lingkungan, salah satunya pupuk organik cair (POC). Penelitian ini bertujuan untuk mengetahui pengaruh berbagai jenis dan konsentrasi POC berbahan dasar cangkang salak (*Salacca zalacca*) dan limbah cair tahu terhadap pertumbuhan dan hasil tanaman bayam merah (*Amaranthus tricolor* L.). Penelitian dilaksanakan di Cisalam, Desa Pasirpanjang, Kecamatan Manonjaya, Kabupaten Tasikmalaya, pada bulan Juni hingga Agustus 2025. Penelitian ini menggunakan peralatan standar budidaya dan pengamatan tanaman, meliputi alat pengolahan media, alat aplikasi pupuk, serta alat ukur pertumbuhan tanaman. Bahan yang digunakan terdiri atas benih bayam merah varietas Mira, limbah kulit salak, limbah cair tahu, EM4, gula merah, pupuk kandang kambing, dan air. Metode penelitian menggunakan Rancangan Acak Kelompok (RAK) dengan tujuh perlakuan, yaitu kontrol tanpa POC, POC cangkang salak 35 ml/L, POC cangkang salak 85 ml/L, POC limbah tahu 300 ml/L, POC limbah tahu 450 ml/L, kombinasi POC cangkang salak 35 ml/L + POC limbah tahu 300 ml/L, serta kombinasi POC cangkang salak 85 ml/L + POC limbah tahu 450 ml/L, yang masing-masing diulang sebanyak empat kali. Parameter yang diamati meliputi seluruh aspek pertumbuhan dan hasil tanaman bayam merah. Hasil penelitian menunjukkan bahwa pemberian POC berpengaruh nyata terhadap seluruh parameter pengamatan. Perlakuan terbaik diperoleh pada kombinasi POC cangkang salak 85 ml/L dan POC limbah tahu 450 ml/L, yang mampu meningkatkan pertumbuhan dan hasil tanaman bayam merah secara signifikan.

Kata kunci : bayam merah, pupuk organik cair, ramah lingkungan

ABSTRACT

THE EFFECT OF CONCENTRATION OF LIQUID ORGANIC FERTILIZER FROM SNAKEFRUIT SHELLS (*Salacca zalacca*) AND TOFU LIQUID WASTE ON THE GROWTH AND YIELD OF RED SPINACH (*Amaranthus tricolor* L.)

By:

Muhammad Zulfikar
NPM 195001003

Supervisor
Maman Suryaman
Elya Hartini

Excessive use of chemical fertilizers in agriculture can reduce soil fertility and cause negative environmental impacts, highlighting the need for eco-friendly alternatives such as liquid organic fertilizer (LOF). This study aimed to evaluate the effects of different types and concentrations of liquid organic fertilizer derived from salak (*Salacca zalacca*) peel and tofu wastewater on the growth and yield of red spinach (*Amaranthus tricolor* L.). The research was conducted in Cisalam, Pasirpanjang Village, Manonjaya District, Tasikmalaya Regency, from June to August 2025. The study utilized standard cultivation and plant observation equipment, including tools for growing media preparation, fertilizer application, and plant growth measurement. The materials used consisted of red spinach seeds of the Mira variety, snake fruit peel waste, tofu wastewater, EM4, brown sugar, goat manure, and water. The experiment was arranged in a Randomized Block Design (RBD) with seven treatments: control (without LOF), salak peel LOF at 35 ml L⁻¹, salak peel LOF at 85 ml L⁻¹, tofu wastewater LOF at 300 ml L⁻¹, tofu wastewater LOF at 450 ml L⁻¹, a combination of salak peel LOF at 35 ml L⁻¹ + tofu wastewater LOF at 300 ml L⁻¹, and a combination of salak peel LOF at 85 ml L⁻¹ + tofu wastewater LOF at 450 ml L⁻¹, each replicated four times. Observed parameters included all growth and yield components of red spinach. The results showed that liquid organic fertilizer application significantly affected all observed growth and yield parameters. The best treatment was the combination of salak peel LOF at 85 ml L⁻¹ and tofu wastewater LOF at 450 ml L⁻¹, which significantly enhanced the growth and yield of red spinach.

Keywords : eco-friendly, liquid organic fertilizer, red spinach