

PENGARUH KOMBINASI DOSIS PUPUK ORGANIK CAIR LIMBAH
UDANG DAN PEMBERIAN NPK 16:16:16 TERHADAP PERTUMBUHAN
DAN HASIL TANAMAN PAKCOY (*Brassica rapa* L.)

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ABSTRAK

Pakcoy (*Brassica rapa* L.) merupakan komoditas sayuran yang banyak diminati masyarakat, namun produktivitasnya belum konsisten sehingga diperlukan upaya peningkatan melalui pemupukan berimbang antara pupuk organik dan anorganik. Limbah udang dimanfaatkan sebagai pupuk organik cair (POC) karena mengandung unsur hara dan bahan organik yang dapat memperbaiki kesuburan tanah. Penelitian ini berlangsung pada bulan Oktober sampai Desember 2025 bertempat di rumah kaca SMK SPP Negeri Tasikmalaya dengan tujuan untuk mengetahui pengaruh kombinasi dosis POC limbah udang dan pupuk NPK 16:16:16 terhadap pertumbuhan dan hasil tanaman pakcoy. Penelitian ini menggunakan metode kuantitatif Rancangan Acak Kelompok terdiri dari 6 perlakuan dan 4 ulangan yang meliputi NPK 0,5 g/tanaman (100% rekomendasi = 200 kg/ha), POC limbah udang 100 ml/tanaman, POC limbah udang 50 ml/tanaman + NPK 0,25 g/tanaman, POC limbah udang 50 ml/tanaman + NPK 0,5 g/tanaman, POC limbah udang 100 ml/tanaman + NPK 0,25 g/tanaman, POC limbah udang 100 ml/tanaman + NPK 0,5 g/tanaman. Parameter yang diamati meliputi tinggi tanaman, jumlah daun, luas daun, diameter batang, berat basah, dan bobot bersih tanaman. Data dianalisis menggunakan *Analysis of Varian* (ANOVA) dan dilanjutkan uji jarak berganda Duncan pada taraf 5%. Hasil penelitian menunjukkan bahwa kombinasi POC limbah udang dan NPK 16:16:16 berpengaruh nyata terhadap tinggi tanaman, luas daun, diameter batang pada 21 dan 28 HST, jumlah daun (28 HST), berat basah, dan bobot bersih tanaman. Kombinasi terbaik diperoleh pada pemberian POC limbah udang 100 ml/tanaman dan NPK 16:16:16 0,5 g/tanaman yang menghasilkan 20,64 cm, jumlah daun 14 helai, luas daun 95,74 cm², diameter batang 7,88 cm, berat basah 129,38 g/tanaman, dan bobot bersih 74,13 g/tanaman.

Kata kunci: Limbah udang, NPK 16:16:16, Pakcoy, POC.

THE EFFECT OF COMBINATION OF SHRIMP WASTE LIQUID ORGANIC
FERTILIZER DOSAGE AND NPK 16:16:16 DOSAGE ON THE GROWTH
AND YIELD OF PAKCOY (*Brassica rapa* L.)

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ABSTRACT

Pakcoy (*Brassica rapa* L.) is a vegetable crop widely favored by consumers, but its productivity has not been consistent, thus requiring improvement efforts through balanced fertilization using organic and in-organic fertilizers. Shrimp waste was utilized as liquid organic fertilizer (LOF) because it contains nutrients and organic matter that can improve soil fertility. This research was conducted from October to December 2025 at the greenhouse of SMK SPP Negeri Tasikmalaya. The study aimed to determine the effect of the combination of shrimp waste liquid organic fertilizer and NPK 16:16:16 fertilizer on the growth and yield of pakcoy. The research was designed using a quantitative method, a Randomized Block Design consisting of six treatments and for replications: NPK 0.5 g/plant (100% recommendation = 200 kg/ha), shrimp waste LOF 100 ml/plant, shrimp waste LOF 50 ml/plant + NPK 0.25 g/plant, shrimp waste LOF 50 ml plant⁻¹ + NPK 0.5 g/plant, shrimp waste LOF 100 ml/plant + NPK 0.25 g/plant, and shrimp waste LOF 100 ml/plant + NPK 0.5 g/plant. The observed parameters included plant height, number of leaves, leaf area, stem diameter, fresh weight, and net weight. Data were analyzed using Analysis of Variance (ANOVA) followed by Duncan's Multiple Range Test (DMRT) at the test level of 5%. The results showed that the combination of shrimp waste LOF and NPK 16:16:16 significantly affected plant height, leaf area, and stem diameter at 21 and 28 days after planting (DAP), number of leaves at 28 DAP, as well as fresh weight and net weight of pakcoy plants. The best treatment was the application of shrimp waste LOF at 100 ml/plant combined with NPK 16:16:16 at 0.5 g/plant, which resulted in plant height of 20.64 cm, 14 leaves, leaf area of 95.74 cm², stem diameter of 7.88 cm, fresh weight of 129.38 g/plant, and net weight of 74.13 g/plant.

Keywords: Liquid organic fertilizer, NPK 16:16:16, Pakcoy, Shrimp waste.