

ABSTRAK

Diah Puspita Sari. 2026. Respons Pertumbuhan dan Hasil Tanaman Mentimun (*Cucumis sativus* L.) terhadap Pemberian Pupuk Organik Cair Limbah Air Kolam Ikan Lele dengan Pupuk NPK. Dibawah bimbingan Cecep Hidayat dan Ahmad Taofik.

Penggunaan pupuk anorganik secara berlebihan dapat menurunkan kesuburan tanah, mencemari lingkungan, serta menurunkan produktivitas tanaman mentimun. Salah satu alternatif yang dapat diterapkan adalah pemanfaatan pupuk organik cair (POC) limbah air kolam ikan lele karena mengandung bahan organik tinggi serta unsur hara makro dan mikro yang dibutuhkan tanaman. Tujuan penelitian ini adalah untuk mengetahui pengaruh kombinasi POC limbah air kolam ikan lele dengan pupuk NPK terhadap pertumbuhan dan hasil tanaman mentimun, serta menentukan dosis terbaiknya. Penelitian dilaksanakan di Desa Cileunyi Kulon, Kecamatan Cileunyi, Kabupaten Bandung mulai Oktober 2025 – April 2026. Metode penelitian menggunakan Rancangan Acak Kelompok dengan 6 perlakuan dan 4 ulangan, yaitu: A = kontrol; B = 100% (1000 mL tanaman⁻¹ POC KL) + 0% (0 kg ha⁻¹ atau 0 g polybag⁻¹ NPK); C = 75% (750 mL tanaman⁻¹ POC KL) + 25% (75 kg ha⁻¹ atau 1,8 g polybag⁻¹ NPK); D = 50% (500 mL tanaman⁻¹ POC KL) + 50% (150 kg ha⁻¹ atau 3,6 g polybag⁻¹ NPK); E = 25% (250 mL tanaman⁻¹ POC KL) + 75% (225 kg ha⁻¹ atau 5,4 g polybag⁻¹ NPK); F = 0% (0 mL tanaman⁻¹ POC KL) + 100% (300 kg ha⁻¹ atau 7,2 g polybag⁻¹ NPK). Hasil penelitian menunjukkan bahwa kombinasi POC limbah air kolam ikan lele dengan pupuk NPK berpengaruh terhadap jumlah daun, jumlah buah per tanaman, dan indeks panen. Kombinasi POC limbah air kolam ikan lele 25% (250 mL tanaman⁻¹) dengan pupuk NPK 75% (225 kg ha⁻¹ atau 5,4 g polybag⁻¹) merupakan perlakuan terbaik dalam meningkatkan pertumbuhan dan hasil tanaman mentimun (*Cucumis sativus* L.).

Kata kunci: Limbah kolam lele, Mentimun, NPK, Pertumbuhan, POC

ABSTRACT

Diah Puspita Sari. 2026. Growth Response and Yield of Cucumber Plants (*Cucumis sativus* L.) to the Application of Liquid Organic Fertilizer from Catfish Pond Wastewater Combined with NPK Fertilizer. Supervised by Cecep Hidayat and Ahmad Taofik.

Excessive use of inorganic fertilizers can reduce soil fertility, pollute the environment, and reduce cucumber productivity. Excessive use of inorganic fertilizers can reduce soil fertility, pollute the environment, and suppress cucumber productivity. One alternative is the use of liquid organic fertilizer (LOF) derived from catfish pond wastewater, which contains high levels of organic matter and macro- and micro-nutrients required by plants. This study aimed to determine the effect of combining LOF from catfish pond wastewater with NPK fertilizer on cucumber plant growth and yield, and to identify the optimal dosage. The research was conducted in Cileunyi Kulon Village, Cileunyi District, Bandung Regency from October 2025 to April 2026. The research method used a Randomized Block Design with 6 treatments and 4 replications, namely: A = control; B = 100% (1000 mL plant⁻¹ LOF KL) + 0% (0 kg ha⁻¹ or 0 g polybag⁻¹ NPK); C = 75% (750 mL plant⁻¹ LOF KL) + 25% (75 kg ha⁻¹ or 1.8 g polybag⁻¹ NPK); D = 50% (500 mL plant⁻¹ LOF KL) + 50% (150 kg ha⁻¹ or 3.6 g polybag⁻¹ NPK); E = 25% (250 mL plant⁻¹ LOF KL) + 75% (225 kg ha⁻¹ or 5.4 g polybag⁻¹ NPK); F = 0% (0 mL plant⁻¹ LOF KL) + 100% (300 kg ha⁻¹ or 7.2 g polybag⁻¹ NPK). The results showed that combining LOF from catfish pond wastewater with NPK fertilizer had a effect on leaf number, number of fruits per plant, and harvest index. The combination of 25% LOF from catfish pond wastewater (250 mL plant⁻¹) with 75% NPK fertilizer (225 kg ha⁻¹ or 5.4 g polybag⁻¹) was the best treatment for improving the growth and yield of cucumber plants (*Cucumis sativus* L.).

Keywords: Catfish pond wastewater, Cucumber, Growth, NPK, LOF