

RINGKASAN

Pupuk organik cair adalah pupuk hasil fermentasi dari beragam bahan organik yang mengandung berbagai unsur hara, fitohormon, dan vitamin. Bahan organik dapat berasal dari sisa tanaman, kotoran hewan, kotoran manusia, limbah agroindustri, dan limbah pasar. Limbah pasar yang dapat dijadikan sebagai pupuk organik adalah limbah jeroan ikan dan bahan organik lainnya berupa buah maja. Kedua bahan organik tersebut mengandung unsur hara yang diperlukan oleh tanaman. Penelitian ini bertujuan untuk 1) mengetahui kandungan unsur hara N, P, dan K pada pupuk organik cair limbah jeroan ikan dan buah maja; 2) menguji pengaruh variasi konsentrasi pupuk organik cair limbah jeroan ikan dan buah maja pada pertumbuhan tanaman caisim; dan 3) menentukan konsentrasi terbaik pupuk organik cair limbah jeroan ikan dan buah maja pada pertumbuhan tanaman caisim.

Penelitian ini dilaksanakan di Desa Prapag Lor Kecamatan Pituruh Kabupaten Purworejo, Laboratorium Agronomi dan Hortikultura Universitas Jenderal Soedirman, Laboratorium Perlindungan Tanaman Universitas Jenderal Soedirman, dan Laboratorium Riset Universitas Jenderal Soedirman pada bulan Januari hingga Mei 2024. Rancangan yang digunakan dalam penelitian ini berupa Rancangan Acak Kelompok (RAK), dengan 6 perlakuan dan 5 ulangan, sehingga terdapat 30 unit percobaan. Perlakuan terdiri dari P1 (0 mL/L), P2 (10 mL/L), P3 (35 mL/L), P4 (60 mL/L), P5 (85 mL/L), dan P6 (110 mL/L). Variabel yang diamati yaitu pH dan kandungan NPK pupuk organik cair jeroan ikan dan buah maja, tinggi tanaman, jumlah daun, luas daun, kandungan klorofil, bobot segar, serta bobot kering tanaman caisim. Data hasil analisis pupuk organik cair jeroan ikan dan buah maja dibandingkan dengan Standar mutu Keputusan Menteri Pertanian Nomor 261/KPTS/SR.310/M/4/2019 tentang Persyaratan Teknis Minimal Pupuk Organik, Pupuk Hayati, dan Pembenh Tanah minimal 2-6%. Data hasil pengamatan pertumbuhan tanaman caisim dianalisis menggunakan ANOVA dan apabila terdapat perbedaan yang nyata diuji lanjut menggunakan uji DMRT taraf kepercayaan 95%.

Hasil analisis pH dan kandungan hara NPK pupuk organik jeroan ikan dan buah maja belum memenuhi standar mutu dari Kepmentan, akan tetapi hasil penelitian menunjukkan bahwa variasi konsentrasi mampu memberikan perbedaan pertumbuhan pada tanaman caisim, meliputi tinggi tanaman, jumlah daun, luas daun, kandungan klorofil, bobot segar, dan bobot kering. Perlakuan P4 (60 mL/L) menunjukkan respon terbaik terhadap tinggi tanaman, luas daun, kandungan klorofil, bobot segar, dan bobot kering tanaman pada minggu ke 5 setelah tanam.

SUMMARY

Liquid organic fertilizer is a fermented fertilizer made from a variety of organic materials that contain various nutrients, phytohormones, and vitamins. Organic materials can come from crop residues, animal waste, human waste, agro-industrial waste, and market waste. Market waste that can be used as organic fertilizer is fish offal waste and other organic materials in the form of maja fruit. Both organic materials contain nutrients needed by plants. This research aims to 1) determine the content of nutrients in the form of N, P, and K elements in liquid organic fertilizer of fish offal waste and maja fruit; 2) test the effect of variations in the concentration of liquid organic fertilizer of fish offal waste and maja fruit on the growth of caisim plants; and 3) determine the best concentration of liquid organic fertilizer of fish offal waste and maja fruit on the growth of caisim plants.

This research was conducted in Prapag Lor Village, Pituruh Subdistrict, Purworejo Regency, the Agronomy and Horticulture Laboratory of Jenderal Soedirman University, the Plant Protection Laboratory of Jenderal Soedirman University, and the Research Laboratory of Jenderal Soedirman University from January to May 2024. The design used in this study was a randomized group design (RAK), with 6 treatments and 5 replications, so there were 30 experimental units. The treatments consisted of P1 (0 mL/L), P2 (10 mL/L), P3 (35 mL/L), P4 (60 mL/L), P5 (85 mL/L), and P6 (110 mL/L). The observed variables were pH and NPK content of liquid organic fertilizer from fish offal and maja fruit, plant height, number of leaves, leaf area, chlorophyll content, wet weight, and dry weight of caisim plants. Data from the analysis of liquid organic fertilizer of fish offal and maja fruit were compared with the quality standard of the Minister of Agriculture Decree No. 261/KPTS/SR.310/M/4/2019 concerning Minimum Technical Requirements for Organic Fertilizers, Biological Fertilizers, and Soil Improvers of at least 2-6%. Data from observations of caisim plant growth were analyzed using ANOVA, and if there were significant differences, they were further tested using the DMRT test at the 95% confidence level.

The results of pH analysis and NPK nutrient content of organic fertilizer of fish offal and maja fruit have not met the quality standards of the Ministry of Agriculture, but the results showed that variations in concentration were able to provide differences in growth in caisim plants, including plant height, number of leaves, leaf area, chlorophyll content, wet weight, and dry weight. Treatment P4 (60 mL/L) showed the best response to plant height, leaf area, chlorophyll content, wet weight, and dry weight of plants at week 5 after planting.