

ABSTRAK

Penelitian bertujuan untuk mendapatkan mulsa, dosis pupuk N dan kombinasi yang paling baik dari semua mulsa dan dosis pupuk N untuk pertumbuhan tanaman pakcoy. Penelitian dilaksanakan pada bulan Agustus - Desember 2023 di lahan Puskesmas II Baturraden, Laboratorium Agronomi dan Kebun Percobaan Fakultas Pertanian dan Perikanan Universitas Muhammadiyah Purwokerto, dan Laboratorium Agrohortikultura dan Laboratorium Ilmu Tanah Fakultas Pertanian, Universitas Jenderal Soedirman. Penelitian menggunakan Rancangan Petak Terbagi (*Split Plot*) dengan dua faktor, yaitu jenis mulsa sebanyak 3 taraf: kontrol (M0), mulsa kacang tanah (M1), dan mulsa plastik hitam (M2). Faktor kedua adalah 4 taraf dosis pupuk nitrogen: kontrol N (N0), 75 kg/ha (N1), 150 kg/ha (N2), dan 225 kg/ha (N3). Hasil menunjukkan bahwa perlakuan tanpa mulsa dan mulsa plastik berbeda nyata pada variabel jumlah daun 30 HST sebesar 12,75 dan 13,43, luas daun sebesar 237,49 cm², 237,18 cm², 286,01 cm², 290,04 cm², 761,16 cm², dan 717,7 cm², dan efisiensi fisiologi sebesar 27,97% dan 21,97%. Perlakuan dosis pupuk N 75 kg/h berpengaruh nyata terhadap efisiensi fisiologi sebesar 40,9% dan efisiensi pemupukan sebesar 26,79%. Perlakuan dosis pupuk N 150 kg/h berpengaruh nyata terhadap kehijauan daun sebesar 42,52, 44,65, 46,29. Tidak terdapat pengaruh nyata pada variabel tinggi tanaman, jumlah daun 10 HST dan 20 HST, bobot segar tanaman, bobot kering tanaman, kerapatan stomata, laju asimilasi bersih, laju pertumbuhan relatif, indeks panen, serapan nitrogen, dan efisiensi agronomi. Kombinasi yang paling optimal untuk biomassa tanaman pakcoy adalah aplikasi mulsa plastik dengan dosis pupuk 75 kg/ha dengan nilai optimal biomassa 16,69 g.

ABSTRACT

The research aims to get the best mulch the best dose of N fertilizer the best combination of all mulches and doses of N fertilizer for the growth of pakcoy plants. The research was carried out from August-December 2023 on the field of Puskesmas II Baturraden, Agronomy Laboratory and Experimental Garden, Faculty of Agriculture and Fisheries, Muhammadiyah University, Purwokerto, and Agrohorticulture Laboratory and Soil Science Laboratory, Faculty of Agriculture, Jenderal Soedirman University. This research uses a Split Plot Design with two factors. The first factor is the mulch's type which consists of 3 levels: control (M0), peanut mulch (M1), and black plastic mulch (M2). The second factor is the 4 levels of dose of nitrogen fertilizer: control (N0), 75 kg/ha (N1), 150 kg/ha (N2), and 225 kg/ha (N3). The results showed that the treatments without mulch and plastic mulch were significantly different in the variable number of leaves at 30 DAT of 12.75 and 13.43, leaf area of 237.49 cm², 237.18 cm², 286.01 cm², 290.04 cm², 761.16 cm², and 717.7 cm², and physiological efficiency of 27.97% and 21.97%. Treatment with a fertilizer dose of N 75 kg/h had a significant effect on physiological efficiency of 40.9% and fertilization efficiency of 26.79%. Treatment with a fertilizer dose of N 150 kg/h had a significant effect on leaf greenness of 42.52, 44.65, 46.29. There was no real influence on the variables of plant height, number of leaves at 10 DAP and 20 DAT, plant fresh weight, plant dry weight, stomata density, net assimilation rate, relative growth rate, harvest index, nitrogen uptake, and agronomic efficiency. The most optimal combination for pakcoy plant biomass is the application of plastic mulch with a fertilizer dose of 75 kg/ha with an optimal biomass value of 16.69 g.