INTISARI

Solarisasi tanah dan pemberian pupuk kandang sapi merupakan teknik yang dapat diterapkan untuk menekan patogen tular tanah dan meningkatkan kesuburan tanah. Oleh karena itu, penelitian ini bertujuan untuk mengetahui pengaruh solarisasi tanah dan pemberian pupuk kandang terhadap suhu tanah, keragaman dan kelimpahan jenis nematoda, serta produksi bawang merah. Penelitian dilaksanakan di Desa Gotakan, Kecamatan Panjatan, Kabupaten Kulon Progo, dan Daerah Istimewa Yogyakarta, dengan menggunakan Rancangan Acak Kelompok Lengkap (RAKL) faktor tunggal, terdiri dari tiga perlakuan dan lima ulangan sebagai berikut: (1) solarisasi + pupuk kandang, (2) pupuk kandang, dan (3) kontrol. Pengamatan dilakukan dalam tiga tahap yaitu sebelum aplikasi, setelah aplikasi, dan panen. Data dianalisis menggunakan *Principal Component Analysis* (PCA) dengan perangkat lunak minitab, uji ANOVA pada taraf 5% menggunakan program SPSS, indeks Shannon-wiener dan indeks Simpson. Hasil penelitian menunjukkan bahwa kombinasi perlakuan solarisasi tanah dan pupuk kandang berpengaruh terhadap suhu tanah dimana suhu tanah tertinggi sebesar 42,04^{o}C. Kombinasi perlakuan solarisasi tanah dan pupuk kandang mampu menurunkan populasi semua jenis nematoda. Pada perlakuan pupuk kandang mampu meningkatkan jumlah populasi *bacterial feeders* dan *fungal feeders.* Perlakuan kombinasi perlakuan solarisasi tanah dan pupuk kandang dapat meningkatkan tinggi tanaman sebesar 8%, berat berangkasan sebesar 32%, berat umbi basah sebesar 28%, dan berat kering umbi sebesar 39%.

Kata kunci: Kelimpahan nematoda, perilaku makan, pupuk kandang, solarisasi tanah

ABSTRACT

Soil solarization and cow manure application are techniques that can be applied to suppress soil-borne pathogens and enhance soil fertility. Therefore, this study aimed to determine the effect of soil solarization and cow manure application on soil temperature, abundance and diversity of nematodes, and shallots production. The research was carried out in Gotakan Village, Panjatan District, Kulon Progo Regency, and Yogyakarta Special Region, using a single-factor Randomized Complete Block Design (RCBD), consisting of three treatments and five replications as follows: (1) solarization + cow manure, (2) cow manure, and (3) control. Observations were made in three stages: before application, after application, and harvest. The data were analyzed using *Principal Component Analysis* (PCA) with minitab software, ANOVA test at 5% level using SPSS program, Shannon-wiener index and Simspon index.The results showed that the combination of soil solarization treatment and manure had an effect on soil temperature where the highest soil temperature was 42,04^{o}C. The combination of soil solarization and manure treatment was able to reduce the population of all types of nematodes. The manure treatment was able to increase the population of bacterial feeders and fungal feeders. The combined treatment of soil solarization and manure treatment can increase plant height by 8%, stover weight by 32%, wet tuber weight by 28%, and tuber weight by 39%.

Keywords: Cow manure, feeding behaviour, nematode abundance, soil solarization