

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian BIO P60 terhadap mortalitas larva nematoda *Meloidogyne* spp., populasi nematoda, tingkat kerusakan akar, dan pertumbuhan serta hasil tanaman tomat. Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman dan rumah kaca Fakultas Pertanian Universitas Jenderal Soedirman, pada bulan Oktober sampai dengan Desember 2018. Penelitian ini menggunakan Rancangan Acak Lengkap (*in vitro*) dan Rancangan Acak Kelompok (*in planta*) dengan 5 perlakuan dan 5 ulangan. Perlakuan *in vitro* konsentrasi BIO P60 yaitu: 1, 5, 10, dan 20 ml/l, sedangkan perlakuan *in planta* frekuensi BIO P60 yaitu: 0, 1, 3, dan 6 kali. Variabel yang diamati meliputi, mortalitas nematoda, populasi akhir nematoda, tingkat kerusakan akar, tinggi tanaman, jumlah daun, jumlah buah, bobot buah, dan bobot segar tanaman. Hasil penelitian menunjukkan bahwa 1) pemberian BIO P60 konsentrasi 20 ml/l mampu menyebabkan mortalitas nematoda sebesar 63.38%, 2) perlakuan frekuensi BIO P60 sebanyak 6 kali mampu menurunkan populasi nematoda sebesar 66.23%, 3) perlakuan frekuensi BIO P60 belum mampu menurunkan kerusakan akar, 4) perlakuan frekuensi BIO P60 belum mampu meningkatkan pertumbuhan dan hasil tanaman tomat.

Kata kunci: Nematoda *Meloidogyne* spp, BIO P60, tanaman tomat

ABSTRACT

This research was aimed to know the effect of BIO P60 on the nematode mortality, population, level of root damage, and the growth and yield of plant. This research conducted in plant protection laboratory and greenhouses of the Faculty of Agriculture, Jenderal Soedirman University, from October 2018 to December 2018. This study uses a random complete design (in vitro) and random block design (in planta) with 5 treatments and 5 replications. The treatments concentration BIO P60 was 1, 5, 10, 20 ml/l. The treatment frequency BIO P60 was 0, 1, 3, and 6 time. The variable observed included the mortality of nematode, final population of nematodes, level of root damage, high plant, number of leaf, number of fruit, weight of fruit, and weight fresh of plant. The result showed that 1) the concentration BIO P60 20 ml/l can causes mortality of nematode 63.38%, 2) the frequency BIO P60 6 time times was able to reduce the population of nematodes 66.23%, 3) the frequency BIO P60 has not been able to reduce root damage, 4) the frequency BIO P60 has not been able to increase the growth and yield of tomato plants.

Keywords: Nematode Meloidogyne spp., BIO P60, tomato plant