

INTISARI

Pratylenchus sp. merupakan salah satu jenis nematoda parasit yang menyerang perakaran tanaman pakis (*Rumohra adiantiformis*) dan dapat menurunkan kualitas dan produktivitas tanaman. Upaya pengembangan bionematisida menjadi alternatif ramah lingkungan dalam pengendalian *Pratylenchus* sp. Penelitian yang dilakukan di Laboratorium Ilmu Hama dan Penyakit Tumbuhan, Fakultas Pertanian dan di lahan milik PT. Tropika Flora Persada yang terletak di Magelang, Jawa Tengah ini bertujuan untuk mengetahui efektivitas *Bacillus velezensis* dan *Bacillus tropicus* dalam menekan populasi dan meningkatkan mortalitas *Pratylenchus* sp. Rancangan penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan parameter yang diamati meliputi nilai repelensi, mortalitas nematoda dalam uji laboratorium, serta populasi nematoda sebelum dan setelah enam bulan perlakuan *Bacillus velezensis*, *Bacillus tropicus*, solarisasi dan kontrol. Hasil penelitian menunjukkan bahwa aplikasi *Bacillus* mampu menekan populasi nematoda di tanah dibandingkan solarisasi dan kontrol. Selain itu, uji repelensi selama 24 dan 48 jam menunjukkan bahwa kedua isolat *Bacillus* mampu menghambat motilitas *Pratylenchus* sp. Perlakuan *Bacillus velezensis* mencatat persentase mortalitas tertinggi serta menyebabkan kerusakan morfologi tubuh nematoda, seperti ruptur dan deformasi kutikula. Berdasarkan hasil tersebut, kedua isolat bakteri ini memiliki potensi sebagai agen hayati pengendali *Pratylenchus* sp. pada budidaya tanaman pakis.

Kata kunci: *Bacillus*; *Pratylenchus*; mortalitas; populasi; repelensi

ABSTRACT

Pratylenchus sp. is a type of parasitic nematode that attacks the roots of fern plants (*Rumohra adiantiformis*) and can reduce the quality and productivity of the crop. The development of bionematicides is an environmentally friendly alternative for controlling *Pratylenchus* sp. This research conducted at the Laboratory of Plant Pest and Disease Science, Faculty of Agriculture, and on the field owned by PT. Tropika Flora Persada in Magelang, Central Java, aimed to determine the effectiveness of *Bacillus velezensis* and *Bacillus tropicus* in suppressing populations and increasing the mortality of *Pratylenchus* sp. A Completely Randomized Design (CRD) was used, with observed parameters including repellency value, nematode mortality in laboratory tests, and nematode populations before and after six months of treatment with *Bacillus velezensis*, *Bacillus tropicus*, soil solarization, and control. The results showed that the application of *Bacillus* was able to suppress nematode populations in the soil compared to solarization and control. In addition, repellency tests at 24 and 48 hours showed that both *Bacillus* isolates could inhibit the motility of *Pratylenchus* sp. *Bacillus velezensis* treatment recorded the highest mortality percentage and caused morphological damage to nematode bodies, such as rupture and cuticle deformation. Based on these results, both bacterial isolates have potential as biological control agents for *Pratylenchus* sp. in fern cultivation.

Key words: *Bacillus*, *Pratylenchus*, mortality, population, repellency