



## INTISARI

*Meloidogyne incognita* merupakan nematoda penyebab puru pada akar dengan kisaran inang luas dan menyebabkan kehilangan hasil 28-100%, terutama pada famili Solanaceae. Salah satu alternatif pengendalian untuk mengurangi dampak negatif pengendalian dengan bahan kimia adalah menggunakan *Bacillus* spp. Penelitian ini bertujuan untuk mengetahui kemampuan 18 isolat *Bacillus* spp. dalam mengendalikan *M. incognita*. Hasil *in vitro* menunjukkan bahwa hampir semua isolat *Bacillus* spp. mampu menghambat penetasan telur *M. incognita*. Lima isolat *Bacillus* spp. terpilih untuk uji *in vivo* yaitu EP3, KPA003, B27, A10, dan DM2 mampu menghambat penetasan telur sebesar 95.75, 80.39, 77.14, 63.40, dan 58.10%. Telur yang diberi perlakuan *Bacillus* spp. abnormal dan tidak menetas menjadi larva 2 (L2). Perlakuan secara *in vivo* di *greenhouse* menunjukkan bahwa lima isolat tersebut mampu meningkatkan tinggi dan panjang akar serta menekan persentase tingkat kerusakan akar sebesar 80.65, 58.06, 56.45, 45.16, 62.90%, persentase jumlah puru/0,1 g sebesar 75.00, 56.82, 53.18, 39.09, 56.36%, serta persentase populasi L2 sebesar 63.98, 44.45, 41.98, 39.05, 52.52%. Isolat *Bacillus* spp. yang digunakan pada pengujian memiliki potensi sebagai agens hayati pengendali *M. incognita*. Perlakuan *Bacillus* spp. mampu meningkatkan pertumbuhan tanaman tomat dan menekan perkembangan *M. incognita*.

Kata kunci: *Bacillus* spp., *Meloidogyne incognita*, Penghambatan penetasan telur, Tomat



## ABSTRACT

*Meloidogyne incognita* is a nematode that causes root knots with a broad host range, as well as yield losses of 28-100%, particularly in the Solanaceae family. One of the alternatives for nematode control that reduces the negative effects of chemical control is the use of *Bacillus* spp. This study aims to determine the ability of 18 isolates of *Bacillus* spp. to control *M. incognita*. The in vitro treatment showed that almost all *Bacillus* spp. isolates could inhibit *M. incognita* egg hatching. Five isolates of *Bacillus* spp. that were selected and tested in vivo, namely EP3, KPA003, B27, A10, and DM2, were able to inhibit egg hatching by 95.75, 80.39, 77.14, 63.40, and 58.10%, respectively. Eggs that were treated with *Bacillus* spp. became abnormal and did not hatch into second-stage juveniles (J2). The in vivo treatment in a greenhouse setting showed that the five isolates of *Bacillus* spp. could increase root height and length as well as reduce the percentage of root damage by 80.65, 58.06, 56.45, 45.16, and 62.90%, respectively; the number of root galls/0.1 g by 75.00, 56.82, 53.18, 39.09, and 56.36%, respectively; and the number of J2 populations/0.5 g by 63.98, 44.45, 41.98, 39.05, and 52.52, respectively. Isolates of *Bacillus* spp. have the potential as biocontrol agents of *M. incognita* by inhibiting egg hatching, suppressing the development of *M. incognita*, and increasing the growth of tomato plants.

Key words: *Bacillus* spp., *Meloidogyne incognita*, Inhibition of egg hatching, tomato