

PENGENDALIAN HAYATI *Plutella xylostella* PADA CAISIM MENGUNAKAN NEMATODA ENTOMOPATOGEN *Steinernema* spp. ISOLAT LOKAL

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INTISARI

Ulat kubis (*Plutella xylostella*) merupakan salah satu hama utama tanaman caisim (*Brassica chinensis*). Selama ini seringkali pengendalian hama tersebut secara kimiawi sehingga pengendalian alternatif yang efektif dan aman perlu dikembangkan adalah dengan secara hayati. Penelitian bertujuan untuk mengetahui keefektifan nematoda entomopatogen *Steinernema* spp. isolat lokal untuk mengendalikan hama *Plutella xylostella* pada tanaman caisim. Penelitian dilakukan di Sub Laboratorium Nematologi Pertanian, Laboratorium Hama Tanaman, Fakultas Pertanian, Universitas Gadjah Mada dan di Dusun Sidoharjo, Bangunkerto, Turi, Sleman, D.I. Yogyakarta. Isolat *Steinernema* spp. diisolasi dari tanah asal Dusun Sidoharjo. Percobaan di laboratorium dimaksudkan untuk menentukan LC50 dan LC99 nematoda entomopatogen. Percobaan polybag dan percobaan lapangan dimaksudkan untuk uji efikasi *Steinernema* spp. dibanding dengan insektisida fipronil 50g/l. Hasil kajian menunjukkan bahwa *Steinernema* spp. isolat lokal berpotensi sebagai agens pengendalian hayati *P. xylostella*. Nilai LC50 sebesar 59,46 JI/ml dan LC99 1.532,47 JI/ml. Pada percobaan polybag *Steinernema* spp. dengan konsentrasi 4.596 JI/ml efektif mengendalikan *P. xylostella* dan relatif sama dengan perlakuan Insektisida Fipronil 50g/l. Keefektifan *Steinernema* spp. di bawah kondisi lapangan tidak signifikan, diduga bias akibat populasi ulat terlalu rendah (2 ekor/tanaman).

Kata kunci: *Plutella xylostella*, *Steinernema* spp., Caisim, Efikasi

BIOLOGICAL CONTROL OF *Plutella xylostella* ON CAISIM USING LOCAL ISOLATE OF ENTOMOPATHOGENIC NEMATODE *Steinernema* spp.

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ABSTRACT

Diamond Back Moth (*Plutella xylostella*) is one of the main pests of caisim plants (*Brassica chinensis*). Farmers heavily on the use of pesticides to control *P. xylostella*, which actually can lead to insect resistant, and polluting the environment. Therefore, a friendly alternative control measure should be developed. One of them is using entomopathogenic nematodes *Steinernema* spp. The objective of this research was to determine the effectiveness of local isolates *Steinernema* spp. as entomopathogenic nematode to control *P. xylostella* pests in *B. juncea*. This research was conducted in the Sub Laboratory of Agricultural Nematology, Plant Pest Laboratory, Faculty of Agriculture, Gadjah Mada University and in the of Sidoharjo, Bangunkerto, Turi, Sleman, D.I. Yogyakarta. *Steinernema* spp. was isolated from the land of Sidoharjo. LC50 and LC99 of entomopathogenic nematodes was determined through Laboratory experiments. Semi field experiments and field experiments were conducted to test the efficacy of *Steinernema* spp. as compared to fipronil 50g/l insecticide. The results of the research showed that *Steinernema* spp. local isolate had the potential as *P. xylostella* biological control agents. The LC50 and LC99 value were 59,46 JI/ml and 1.532,47 JI/ml respectively. In the semi field experiment the concentrate of 4.596 JI/ml was effective to controlling *P. xylostella* and relatively as effective as the Fipronil 50g/l insecticide treatment. The effectiveness of *Steinernema* spp. under field conditions was not significant, the possible factors might due to *P. xylostella*'s low population (2 larvae/plant).

Keywords: *Plutella xylostella*, *Steinernema* spp., *Brassica chinensis*, Efficacy