RINGKASAN

Kubis (*Brassica oleracea* L.) merupakan salah satu komiditas hortikultura yang penting di Indonesia. Ulat grayak (*Spodoptera litura* F.) merupakan faktor pembatas pada produksi tanaman kubis. Pengendalian alternatif untuk mengendalikan ulat tersebut dapat menggunakan nematoda entomopatogen (NEP) *Heterorhabditis* sp. Penelitian ini bertujuan untuk 1) mengkaji kemempanan nematoda entomopatogen *Heterorhabditis* sp. isolat Cilongok terhadap intensitas serangan ulat grayak (*S. litura*) pada tanaman kubis yang diaplikasikan berdasarkan ambang ekonomi dua larva per tanaman, 2) membandingkan kemempanan nematoda entomopatogen *Heterorhabditis* sp. dengan berbagai insektisida sintetis terhadap pengendalian serangan ulat grayak (*S. litura*).

Penelitian ini dilaksanakan dari bulan April sampai Agustus 2016 di Laboratorium Perlindungan Tanaman Fakultas Pertanian Universitas Jenderal Soedirman Purwokerto dan kebun percobaan Pratin di Serang Kecamatan Karangreja Kabupaten Purbalingga. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 9 perlakuan dan 3 kali ulangan. Perlakuan yang dilakukan adalah tanpa perlakuan (kontrol), NEP dengan kosentrasi 400 JI/ml, 600 JI/ml, dan 800 JI/ml, insektisida berbahan aktif profenofos, karbonsulfan, deltametrin, buprofezin dan *Bacillus thuringensis*. Variabel yang diamati adalah jumlah kelompok telur, populasi ulat, populasi imago pada *yellow trap*, intensitas serangan dan bobot krop kubis. Data dianalisi dengan uji F kemudian dilanjutkan dengan *Ducan's Multiple Range Test* (DMRT) pada taraf kesalahan 5%.

Hasil penelitian menunjukan nematoda entomopatogen *Heterorhabditis* sp. isolat Cilongok berdasarkan ambang ekonomi dua larva per tanaman belum efektif seperti halnya dengan penggunaan insketisida dalam mengendalikan intensitas serangan dan populasi ulat grayak (*S. litura*) pada tanaman kubis.

SUMMARY

*Cabbage (*Brassica oleracea *L.) is an important horticultural commodity in Indonesia. The main handicap in production of this commodity is cabbage cluster caterpillar* (Spodoptera litura *F.*). *For controlling this pest, using entomopathogenic nematodes (EPN) such as* Heterorhabditis *sp is an alternative control measure. The goal of this research were to 1) examine effectiveness of entomopathogenic nematodes* Heterorhabditis *sp. Cilongok isolate against the intensity attacks of cluster caterpillar (*S. litura*) in cabbage crop that applied based on economy threshold two larvae per plant, 2) compare the effectiveness of entomopathogenic nematodes* Heterorhabditis *sp. with some synthetic insecticides in controlling the pest.*

The research was conducted on April until August 2016 at Laboratory of Plant Protection, Faculty of Agriculture the Jenderal Soedirman University, Purwokerto and at the experimental station Pratin at Serang, Karangreja, Purbalingga. The experiment used a Randomized Complete Block Design (RCBD) with 9 treatments and 3 replications. The treatment were without any treatment (control), entomopathogenic nematode with concentration of 400 Infective Juveniles/ml, 600 Infective Juveniles/ml, and 800 Infective Juveniles/ml, insecticide of prophenophos, carbonsulfan, deltamethrin, buprofezin and Bacillus thuringensis. *The measured variables were mass of eggs, larvae population, imago population on yellow trap, intensity of attacks and the weight of cabbage crop. Data were analyzed using F test and followed by Ducan's Multiple Range Test (DMRT) at the 5 % level of error.*

The results showed that entomopathogenic nematodes Heterorhabditis *sp. Cilongok isolate based on economy threshold two larvae per plant did not been effective as well as use insecticides in controlling the intensity of attacks and population of caterpillar* (S. litura) *on cabbage crop.*