

INTISARI

Pratylenchus coffeae merupakan nematoda yang paling merusak dan banyak ditemukan pada tanaman kopi diberbagai wilayah di dunia, termasuk Indonesia. Kerugian yang ditimbulkan oleh serangan nematoda ini pada perkebunan kopi di Indonesia mencapai 78%. Selain *P. coffeae*, nematoda puru akar *Meloidogyne* sp. merupakan nematoda parasit yang menimbulkan kerugian yang tinggi pada perkebunan kopi. Penelitian ini bertujuan mengetahui daya rusak beberapa jamur nematofagus terhadap nematoda parasite *P. coffeae* dan *M. incognita*. Seleksi isolat dilakukan dengan uji patogenesisitas *in vitro* menggunakan suspensi spora semua isolat uji dengan kerapatan 10^6 spora/mL terhadap nematoda *P. coffeae* stadia campuran dan telur muda *M. incognita*. Uji patogenesisitas dilakukan dengan cara menyeleksi isolat jamur yang memiliki persentase kerusakan $\geq 50\%$. Nematoda *P. coffeae* dan *M. incognita* diuji secara *in vitro* dengan suspensi jamur dan filtrat kultur cair. Uji kemampuan isolat jamur menghasilkan enzim ekstraseluler protease dan kitinase, dilakukan secara kualitatif dan kuantitatif. Mekanisme antagonistik isolat jamur nematofagus terhadap nematoda uji dilakukan dengan pengamatan 7 hari setelah perlakuan. Dari hasil penelitian dapat disimpulkan bahwa; 1) isolat F7HIA (*Aspergillus flavus*) merupakan isolat yang menyebabkan kerusakan dan kematian tertinggi dari kedua uji, yaitu dengan telur *M. incognita* dan nematoda *P. coffeae*, 2) Keseluruhan isolat uji jamur nematofagus yang diuji memiliki kemampuan menghasilkan enzim protease, 3) Ada perbedaan kenampakan kerusakan yang diakibatkan oleh isolat jamur nematofagus dan filtrat kultur cairnya terhadap *P. coffeae* dan *M. incognita*, 4) Semua isolat uji berpotensi sebagai pengendali hayati nematoda parasit.

Kata kunci : Aktivitas enzim ekstraseluler, Jamur nematofagus, *Meloidogyne incognita* dan *Pratylenchus coffeae*

ABSTRACT

Pratylenchus coffeae is a plant-parasitic nematode which is a major cause in the decline of coffee plant yield in Indonesia. The loss caused by *P. coffeae* is up to 78%. Beside *P. coffeae*, root knot nematodes *Meloidogyne* sp. also can cause high losses in coffee plantations. This research were aimed to know the destructive strength of some nematofagous fungi to parasitic nematode *P. coffeae* and *M. incognita*. The isolate screening was conducted by pathogenicity *in vitro* test using all isolates spore suspension with density of 10^6 spores/mL to nematode *P. coffeae* and *M. incognita*. Pathogenicity test was done by choosing fungal isolates which had ability to cause more than 50% nematode mortality. *P. coffeae* and *M. incognita* was tested by *in vitro* method with fungal spore suspension and culture filtrate of nematofagous. The ability tests of fungal isolates to produce extracellular enzymes protease and chitinase, were done qualitatively and quantitatively. The antagonistic mechanism of nematofagous fungal isolates to nematodes was done by observing 7 days after treatment. The results were: 1) isolates F7HIA (*Aspergillus flavus*) was isolate that causes damage and death at the highest mortality of both test, i.e. eggs of *M. incognita* and nematode *P. coffeae*, 2) All fungal nematofagous isolates had the ability to produce enzyme protease, 3) There were differences of damage caused by the nematofagous fungal isolates and culture filtrate to *P. coffeae* and *M. incognita*, 4) All isolates had potential as a biological control agens for parasitic nematodes.

Key words: Extraceluller enzyme activity, Nematofagous fungal, *Meloidogyne incognita* and *Pratylenchus coffeae*