ABSTRAK

DAYA HAMBAT TUJUH ISOLAT JAMUR *Trichoderma* spp. TERHADAP *Phytophthora palmivora* PENYEBAB PENYAKIT BUSUK BUAH KAKAO

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Penyakit yang sangat penting dalam budidaya kakao adalah penyakit busuk buah kakao (BBK) atau *pod rot* yang disebabkan oleh *Phytophthora palmivora.* Beberapa usaha pengendalian telah dilakukan untuk mengendalikan penyakit dan kehilangan hasil panen akibat penyakit busuk buah. Salah satu pengendalian yang digunakan adalah menggunakan agens pengendali hayati *Trichoderma*s pp. Penelitian ini bertujuan (1) mengetahui pengaruh tujuh isolat jamur *Trichoderma* spp. terhadap pertumbuhan *P. palmivora* penyebab penyakit busuk buah kakao secara *in vitro,* dan (2) mengetahui pengaruh tujuh isolat jamur *Trichoderma* spp. terhadap perkembangan gejala penyakit busuk pada buah kakao di laboratorium. Penelitian dilaksanakan di Laboratorium Penyakit Tumbuhan Jurusan Proteksi Tanaman Fakultas Pertanian Universitas Lampung dari bulan Juli sampai dengan Desember 2011. Penelitian menggunakan Rancangan Acak Lengkap. Perlakuan terdiri dari tujuh isolat *Trichoderma*: (1) *T. viride*, (2) *T. koningii*, (3) *T. harzianum*, (4) *Trichoderma* isolat Lampung Timur, (5) *Trichoderma* isolat Tegineneng,

(6) *Trichoderma* isolat Tanggamus, dan (7). Setiap perlakuan terdiri atas 5 ulangan untuk percobaan *in vitro* dan 3 ulangan untuk percobaan buah di laboratorium. Hasil penelitian menunjukkan bahwa empat isolat jamur *Trichoderma* hasil isolasi dapat dikelompokkan dalam tiga spesies yaitu *T. harzianum* (isolat Lampung Timur dan isolat Tanggamus), *T. koningii* (isolat Tegineneng), dan *T. viride* (isolat Pringsewu). Ketujuh isolat jamur *Trichoderma* spp. tersebut mampu menghambat pertumbuhan koloni jamur *P. palmivora* secara *in vitro*. Hasil uji penghambatan gejala BBK di laboratorium menunjukkan bahwa tujuh isolat jamur *Trichoderma* memiliki potensi sebagai agens hayati untuk mengendalikan penyakit BBK, akan tetapi hanya *T. harzianum* isolat Tanggamus yang konsisten mampu menghambat perkembanga ngejala BBK.

Kata kunci: *P. palmivora*, busuk buahkakao, isolat *Trichoderma* spp., daya hambat.

ABSTRACT

INHIBITION POTENTIAL OF SEVEN *Trichoderma spp*. ISOLATES ON *Phytophthora palmivora*, THE CAUSAL AGENT OF COCOA POD ROT DISEASE

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The most important disease in the cultivation of cacao is pod rot disease caused by *Phytophthora palmivora*. Several methods have been developed to control the disease and the yield loss due to pod rot disease. A method control generally used is application of bio-control agents, one of them is *Trichoderma* spp. The research was aimed (1) to observe the effect of seven *Trichoderma* spp. isolates on the in vitro growth of *P. palmivora* causing cocoa pod rot disease, and (2) to observe the effect of seven *Trichoderma* spp. isolates on the symptom development of cocoa pod rot disease on cocoa pod in the laboratory. The research was conducted at the Plant Pathology Laboratory, Plant Protection Department, Agriculture Faculty, University of Lampung, from July to December 2011. The treatments were arranged in Completely Randomized Design. The treatments were (1) *T. viride*, (2) *T. koningii*, (3)*T. harzianum*, (4) *Trichoderma* isolate from East Lampung, (5) *Trichoderma* isolate from Tegineneng, (6) *Trichoderma* isolate from Tanggamus, and (7) *Trichoderma* isolate from Pringsewu. Each treatment consisted of 5 replicates for

in vitro experiment and 3 replicates for cocoa pod experiment in the laboratory. The results revealed that four *Trichoderma* spp. isolates can be grouped within three different species namely *T. harzianum* (East Lampung and Tanggamus isolate), *T. koningii* (Tegineneng isolate), and *T. viride* (Pringsewu isolate). All of the seven isolates tested were capable of inhibiting the growth of *P. palmivora in vitro*. The result of cocoa pod experiment showed that seven *Trichoderma* spp. isolates potentially can be used as bio-agents to control the pod rot disease, but only *T. harizanum* isolate from Tanggamus that consistently inhibited the pod rot symptom.

Key words: *P. palmivora*, cocoa pod rot, *Trichoderma* spp. isolates, inhibition.