KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
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KEPUTUSAN
DEKAN FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA
Nomor : 0224 / UN9.1.5/AK.16/2017

Tentang

PENGANGKATAN PEMBIMBING TESIS MAHASISWA S2 PROGRAM STUDI MAGISTER ILMU TANAMAN PROGRAM PASCASARJANA FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA

DEKAN FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA

Memperhatikan : Surat Ketua Program Studi Magister Ilmu Tanaman Program Pascasarjana Fakultas Pertanian Universitas Sriwijaya nomor : 012/UN9.1.5/AK.16/2017 tanggal 10 Januari 2017 perihal Permohonan penambahan SK pembimbing tesis mahasiswa.

Menimbang :
a. Bahwa dalam rangka pelaksanaan kegiatan pembelajaran dan pembimbingan mahasiswa S2 Program Studi Magister Ilmu Tanaman Program Pascasarjana Fakultas Pertanian Universitas Sriwijaya perlu dibimbing dan diarahkan sesuai dengan bidang ilmu.
c. Bahwa sehubungan dengan butir 'a" di atas perlu diterbitkan surat keputusan sebagai pedoman dan landasan hukumnya.

Mengingat :
1. Undang-Undang No. 20 Tahun 2003 tentang Sistem Pendidikan Nasional.
2. Peraturan Pemerintah Republik Indonesia No. 42 Tahun 1960 tentang Pendirian Universitas Sriwijaya.
3. SK. Menteri PTIP No.108 tahun 1963 tentang Pendirian Fakultas Pertanian Universitas Sriwijaya
4. SK Menristekdikti No. 012/2015 tentang Organisasi dan Tata Kerja Universitas Sriwijaya.
5. SK. Mendiknas No. 064 Tahun 2003 tentang Statuta Universitas Sriwijaya
6. SK Rektor Universitas Sriwijaya No : 0018/UN9/KP/2012 tanggal 13 Januari 2012 tentang Peralihan Status (Kedudukan) Pengelolaan Program Studi S2 Ilmu Tanaman dan S2 Agribisnis serta S3 Bidang Ilmu Petanian Program Pascasarjana dibawah Fakultas Pertanian Universitas Sriwijaya.
7. SK Rektor Universitas Sriwijaya No. 0043/UN9/KP/2013 Tanggal 19 Februari 2013 tentang Pengangkatan Dekan Fakultas Pertanian Universitas Sriwijaya Periode 2013-2017.

MEMUTUSKAN :

Menetapkan : **KEPUTUSAN DEKAN FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA TENTANG PENGANGKATAN PEMBIMBING TESIS MAHASISWA S2 PROGRAM STUDI MAGISTER ILMU TANAMAN PROGRAM PASCASARJANA FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA.**

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PERTAMA : Menunjuk tenaga pendidik sebagaimana terlampir, menjadi pembimbing Tesis mahasiswa Program Studi Magister Ilmu Tanaman Program Pascasarjana Fakultas Pertanian Universitas Sriwijaya dalam mempersiapkan rencana dan pelaksanaan segala bentuk kegiatan yang berkaitan dengan penyusunan Tesis.

KEDUA : Segala biaya yang timbul sebagai akibat dari diterbitkannya surat keputusan ini dibebankan pada anggaran yang tersedia pada Fakultas Pertanian Universitas Sriwijaya.

KETIGA : Keputusan ini berlaku sejak tanggal ditetapkan, dengan ketentuan bahwa segala sesuatu akan diubah atau diperbaiki sebagaimana mestinya apabila terdapat kekeliruan dalam keputusan ini.

Ditetapkan di : Indralaya
Pada tanggal : 19 JAN 2017

Dekan,

Dr. Ir. Erizal Sodikin.
NIP 196002111985031002

Tembusan :
1. Rektor Unsri
2. KPS Magister ITN PPS FP Unsri
3. Dosen Pembimbing
4. Yang Bersangkutan

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Lampiran : Surat Keputusan Dekan FP Unsri
Nomor : 0224 /UN9.1.5/AK.16/2017
Tanggal : 19 JAN 2017

DAFTAR PEMBIMBING TESIS MAHASISWA S2
PROGRAM STUDI MAGISTER ILMU TANAMAN PROGRAM PASCASARJANA
FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA

No	Nama	NIM	BKU	PEMBIMBING
1	Eka Sumikarsih	05012621620008	Proteksi Tanaman	1. Prof. Dr. Ir. Siti Herlinda, M.Si. 2. Dr. Ir. Yulia Pujiastuti, M.S.

Dekan,

Dr. Ir. Erizal Sodikin.
NIP 196002111985031002

TESIS

KERAPATAN DAN VIABILITAS KONIDIA JAMUR ENTOMOPATOGEN ASAL SUMATERA SELATAN YANG DIUJI PADA SUHU TERTENTU DAN PENGUJIAN BIOINSEKTISIDA BERBASIS JAMUR ENTOMOPATOGEN TERHADAP UMUR SIMPAN SERTA VIRULENSINYA TERHADAP SERANGGA UJI

DENSITY AND VIABILITY OF ENTOMOPATHOGENIC FUNGAL SPORES NATIVE TO SOUTH SUMATRA TESTED UNDER CERTAIN TEMPERATURES AND THE BIOASSAY OF THE EFFECTS OF STORING TIME OF ENTOMOPATHOGENIC FUNGAL BASED BIOINSECTICIDE ON ITS VIRULENCE AGAINST TARGET INSECT

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FAKULTAS PERTANIAN
UNIVERSITAS SRIWIJAYA
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TESIS

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2019

LEMBAR PENGESAHAN

KERAPATAN DAN VIABILITAS KONIDIA JAMUR ENTOMOPATOGEN ASAL SUMATERA SELATAN YANG DIUJI PADA SUHU TERTENTU DAN PENGUJIAN BIOINSEKTISIDA BERBASIS JAMUR ENTOMOPATOGEN TERHADAP UMUR SIMPAN SERTA VIRULENSINYA TERHADAP SERANGGA UJI

TESIS

Sebagai Salah Satu Syarat Untuk
Memperoleh Gelar Magister Sains (M.Si.)

Oleh :

EKA SUMIKARSIH
05012681620008

Palembang, Juni 2019

Pembimbing I	Pembimbing II
Prof. Dr. Ir. Siti Herlinda, M.Si.	**Dr. Ir. Yulia Pujiastuti, M.S.**
NIP. 196510201992032001	**NIP. 196205181987032002**

Mengetahui,
Dekan Fakultas Pertanian

Prof. Dr. Ir. Andy Mulyana, M.Sc.
NIP. 196012021986031003

Tesis dengan judul "Kerapatan dan Viabilitas Konidia Jamur Entomopatogen Asal Sumatera Selatan yang Diuji pada Suhu Tertentu dan Pengujian Bioinsektisida Berbasis Jamur Entomopatogen terhadap Umur Simpan serta Virulensinya terhadap Serangga Uji" oleh Eka Sumikarsih telah dipertahankan di hadapan Komisi Penguji Tesis Program Studi Ilmu Tanaman Pascasarjana Fakultas Pertanian Universitas Sriwijaya pada tanggal 30 Juli 2018 dan telah diperbaiki sesuai saran dan masukkan dari tim penguji.

Komisi Penguji

1. Prof. Dr. Ir. Siti Herlinda, M.Si NIP. 196510201992032001	Ketua	(.....)
2. Dr. Ir. Yulia Pujiastuti, M.S NIP. 196205181987032002	Sekertaris	(.....)
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Mengetahui,
Ketua Program Studi
Ilmu Tanaman

Dr. Ir. Mery Hasmeda, M.Sc.
NIP. 196303091987032001

PERNYATAAN INTEGRITAS

Yang bertanda tangan di bawah ini :

Nama : Eka Sumikarsih

Nim : 05012681620008

Judul : Kerapatan dan Viabilitas Konidia Jamur Entomopatogen Asal Sumatera Selatan yang Diuji Pada Suhu Tertentu dan Pengujian Bioinsektisida Berbasis Jamur Entomopatogen Terhadap Umur Simpan Serta Virulensinya Terhadap Serangga Uji

Menyatakan bahwa semua data dan informasi yang dimuat di dalam laporan tesis ini merupakan hasil penelitian saya sendiri di bawah supervisi pembimbing, kecuali yang disebutkan dengan jelas narasumbernya. Apabila di kemudian hari ditemukan adanya unsur plagiasi dalam tesis ini, maka saya bersedia menerima sanksi akademik dari Universitas Sriwijaya.

Demikian pernyataan ini saya buat dalam keadaan sadar dan tidak mendapat paksaan dari pihak manapun.

Palembang, Juni 2019

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Eka Sumikarsih
NIM 05012681620008

SUMMARY

EKA SUMIKARSIH. Density and Viability of Entomopathogenic Fungal Spores Native to South Sumatra Tested under Certain Temperatures and the Bioassay of the Effects of Storing Time of Entomopathogenic Fungal Based Bioinsecticide on its Virulence against Target Insect (Supervised by **SITI HERLINDA and YULIA PUJIASTUTI**).

Entomopathogenic fungi potential to be biocontrol agent are *Beauveria bassiana* (Bals.) Vuil land *Metarhizium anisopliae*. Temperature and longevity of storage of the fungi could cause ruin the viability and virulence of *B. bassiana* and *M. anisopliae* commonly used to control pests such as brown plant hopper (*Nilaparvata lugens*). The objective of this research was to know the virulence of *B. bassiana* and *M. anisopliae* isolates stored under temperatures of 25°C and 34°C and the effectiveness of bioinsecticide stored for different longevity being applied to target insects. The experiment was arranged in a complete randomized design with 26 *B. bassiana* isolates as treatment with 3 replications : 23 *M. anisopliae* as treatment with 3 replications, and 7 storing time as treatment with 5 replications. The results showed that temperatures of 25°C and 34°C were the best temperature for *B. bassiana* isolate TS1D2 (A) which produced 42,69 10^7/cm^{2}spores at 25°C, and for isolate TS1D2 (B) which produced 4,57 10^7/cm2 spores at 34°C. The highest conidial viability under temperature of 25°C was found in TS1D3 (A) isolate amounted to 81,42%, while the highest viability under temperature 34°C was of BVR S2 isolate amounted to 32,58%. The high mortality under 25°C was of TS1D2 (B) isolate amounted to 96,67%, while the high mortality under 34°C was of BTMSo isolate amounted to 40,00

The effects of temperature on conidial density of *M. anisopliae* showed that the highest conidial density under temperature 25°C was found in MPdPe isolate amounted to 13,90 10^7 conidia/cm^2, while the highest conidial density under 34°C was found produced by MPdR2 isolate amounted to 2,69 10^7 conidia/cm^2. The highest conidial viability under temperature 25°C was found produced by MSwTp2 isolate, amounted to 37,88% when being observed after 24

hours, however, the highest conidial viability after 48 hours was of MSwTp2 isolate, amounted to 59,95%. Under temperature 34°C, the highest conidial viability was produced by MKbTp2 isolate, amounted to15,22%, but observation after 48 hours showed that the highest conidial viability was produced byMKbTp2 isolate, amounted to 21,81%.The highest mortality under 25°C was found in MKbTp2 isolate, amounted to 86,67%, and under 34°C, the highest mortality was of MKbTp2 isolate, amounted 50,00%.

After being stored for 6 months, *B. bassiana* (shaker) had highest conidial density amounted to 4,30 x 10^9conidia.mL^{-1}, highest conidial viability amounted to 51,15%, highest mortality amounted to 56,67%. After being stored for 9 months, *B. bassiana* (shaker) had highest conidial density amounted to 2,31 x 10^9conidia.mL^{-1}, highest conidial viability amounted to 28,67%, and highest mortality amounted to 30,67%. After being stored for 12 months, *B. bassiana* (shaker) had highest conidial density amounted to 1,15x 10^9 conidia.mL^{-1}, highest conidial viability amounted to 9,97%, and highest mortality amounted to 18,00%.

It can be concluded that some isolates of *B. bassiana* and *M. anisopliae* were still virulent even though being incubated under 34°C for 7 days. Therefore, the isolates could be used as biological control agent for *N. lugens* in tropical paddy fields such as swampy and tidal areas in Indonesia. Conidia of *B. bassiana* (Shaker) stored for 6 months could cause mortality of *T. molitor* u to 54,67% which was significantly different from other treatments both for*B. bassiana* and *M. anisopliae*. The highest mortality was found in media stored for 9 and 12 months. The mortality in each treatments also decreasing as the storing time was increasing. Therefore, *B. bassiana* and *M. anisopliae* stored in the form of conidia was the best media to keep conidial viability and the pathogenicity of entomopathogenic fungi.