

**KARAKTERISASI DAN POTENSI *Trichoderma* spp.
BIANG SPORA DAN BIANG ENZIM DALAM PENANGGULANGAN
LIMBAH TANDAN KOSONG KELAPA SAWIT**

TESIS

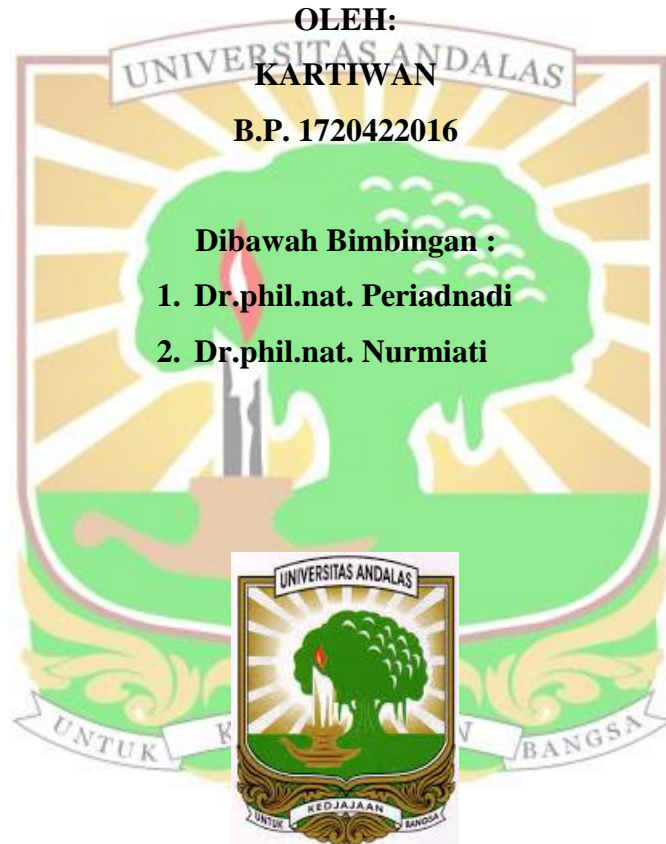
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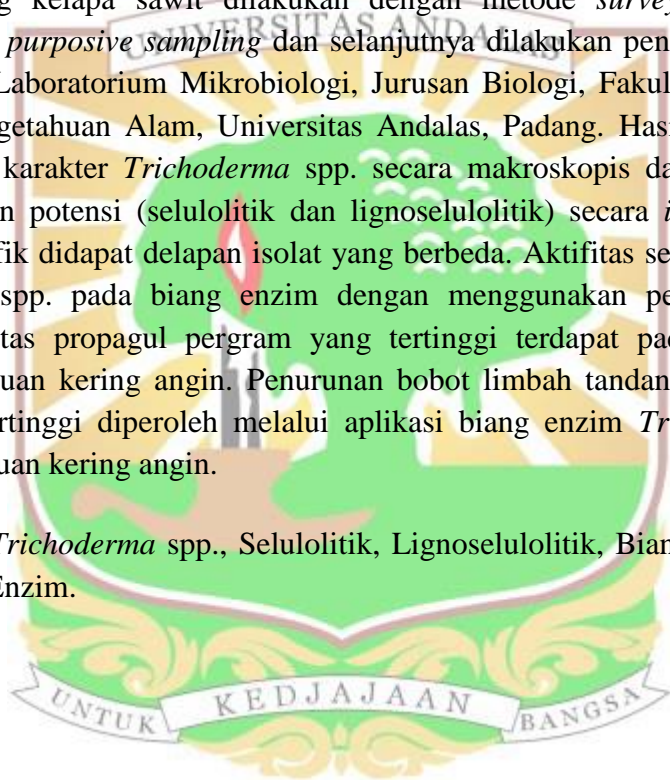


**PROGRAM STUDI BIOLOGI PASCASARJANA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
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ABSTRAK

Penelitian mengenai Karakterisasi dan Potensi *Trichoderma* spp. Biang Spora dan Biang Enzim dalam Penanggulangan Limbah Tandan Kosong Kelapa Sawit telah dilakukan dari bulan Juli sampai Desember 2018. Penelitian ini bertujuan untuk menganalisis karakter *Trichoderma* spp. dan potensi *Trichoderma* spp. secara *in vitro* menggunakan medium spesifik, menganalisis aktifitas selulase biang spora dan biang enzim *Trichoderma* spp., menganalisis viabilitas propagul pergram biang spora dan biang enzim yang siap pakai, dan menganalisis kemampuan biang spora dan biang enzim isolat *Trichoderma* spp. dalam mendekomposisi limbah tandan kosong kelapa sawit dilakukan dengan metode *survey*, pengambilan sampel secara *purposive sampling* dan selanjutnya dilakukan pengolahan sampel dilakukan di Laboratorium Mikrobiologi, Jurusan Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Andalas, Padang. Hasil penelitian ini menunjukkan karakter *Trichoderma* spp. secara makroskopis dan mikroskopis, serta pengujian potensi (selulolitik dan lignoselulolitik) secara *in vitro* melalui medium spesifik didapat delapan isolat yang berbeda. Aktifitas selulase tertinggi *Trichoderma* spp. pada biang enzim dengan menggunakan perlakuan kering angin. Viabilitas propagul pergram yang tertinggi terdapat pada biang spora dengan perlakuan kering angin. Penurunan bobot limbah tandan kosong kelapa sawit yang tertinggi diperoleh melalui aplikasi biang enzim *Trichoderma* spp. dengan perlakuan kering angin.

Kata kunci : *Trichoderma* spp., Selulolitik, Lignoselulolitik, Biang Spora, Biang Enzim.



ABSTRACT

Research on the Characteristics and Potential of *Trichoderma* spp. Starter Spores and Enzyme Starters in the Management of Oil Palm Empty Bunches Waste have been carried out from July to December 2018. This study aims to analyze the character of *Trichoderma* spp. and the potential of *Trichoderma* spp. in vitro using a specific medium, analyzing cellulase activity of Starter spores and *Trichoderma* spp., analyzed the growth of ready-to-use Starter spore and enzyme starter propagules, and analyzed the ability of Starter spores and *Trichoderma* spp. isolates in decomposing oil palm empty fruit bunch waste enzymes carried out by survey method, sampling by purposive sampling and then processing samples carried out in the Laboratory Microbiology, Department of Biology, Faculty of Mathematics and Natural Sciences, Andalas University, Padang. The results of this study showed that the character of *Trichoderma* spp. in macroscopic and microscopic, as well as the potential testing (cellulolytic and lignocellulolytic) in vitro through a specific medium obtained eight different isolates. The highest cellulase activity of *Trichoderma* spp. on enzyme starters using dry wind treatment. The highest viability of pergram propagules was found in the starter spores with dry wind treatment. The highest decrease in the weight of oil palm empty fruit bunches waste was obtained through the application of *Trichoderma* spp. enzyme starter with dry wind treatment.

Keywords: *Trichoderma* spp., Cellulolytic, Lignocellulolytic, Starter Spore, Starter Enzyme.

