

INTISARI

PENGARUH PRODUKSI SENYAWA ORGANIK VOLATIL OLEH *Nocardiopsis* GME22 PADA *SOLID STATE FERMENTATION* TERHADAP PERTUMBUHAN *Ganoderma* sp.

MAMLU'ATUL AZIZAH
16/398849/PN/14820

Kelapa sawit merupakan komponen penting dalam kebutuhan sehari-hari. *Ganoderma* sebagai fungi patogen utama yang berpengaruh terhadap produksi kelapa sawit. Penelitian ini bertujuan untuk mengetahui pengaruh Senyawa Organik Volatil (SOV) yang dihasilkan *Nocardiopsis* GME22 pada *Solid State Fermentation* (SSF) dan tanah terhadap pertumbuhan *Ganoderma*. Pengujian dilakukan dengan metode *inverted petri dish* untuk mengetahui pertumbuhan *Ganoderma*. Jenis SOV yang berperan dalam penghambatan diidentifikasi menggunakan metode SPME-GC-MS. Kerusakan miselium *Ganoderma* akibat paparan SOV diamati menggunakan *Scanning Electron Microscope* (SEM). SOV *Nocardiopsis* GME22 pada SSF jagung dan sorghum mampu menghambat pertumbuhan *Ganoderma* sebesar 51,80 dan 60,86%. Identifikasi SOV dengan SPME-GC-MS menunjukkan perbedaan profil SOV yang dihasilkan *Nocardiopsis* GME22 pada kedua substrat SSF. SOV 10% *Nocardiopsis* GME22 pada tanah mampu menghambat pertumbuhan *Ganoderma* dan berpengaruh terhadap morfologi miseliumnya. SOV yang diproduksi *Nocardiopsis* GME22 pada SSF dan tanah mampu menghambat pertumbuhan *Ganoderma*.

Kata kunci: *Ganoderma*, *Nocardiopsis* GME22, senyawa organik volatil, antifungal, *solid state fermentation*

ABSTRACT

THE EFFECT OF VOLATILE ORGANIC COMPOUNDS PRODUCTION BY *Nocardiosis* GME22 BY SOLID STATE FERMENTATION ON *Ganoderma* sp. GROWTH

MAMLU'ATUL AZIZAH
16/398849/PN/14820

Palm tree is an important component in daily needs. *Ganoderma* as the major pathogen that affects the palm tree production. The aim of this study was to evaluate the inhibitory effects of Volatile Organic Compounds (VOCs) emitted by *Nocardiosis* GME22 produced by Solid State Fermentation (SSF) and on soils. The test was carried out by inverted petri dish method to measure *Ganoderma* growth. Type of VOC in role inhibition was identified using SPME-GC-MS method. The *Ganoderma*'s mycelium damage was observed using Scanning Electron Microscope (SEM). VOC that emitted by *Nocardiosis* GME22 by corn SSF and sorghum SSF can inhibit *Ganoderma* sp. growth up to 51,80 and 60,86%. Identification of VOC using SPME-GC-MS show the different VOC profile produce by *Nocardiosis* GME22 on each SSF substrate. SOV production by 10% *Nocardiosis* GME22 on soils can inhibit *Ganoderma* sp. growth and affect the morphology of its mycelium. VOC produce by *Nocardiosis* GME22 by SSF and soils able to inhibit on *Ganoderma* sp. growth.

Keywords : *Ganoderma*, *Nocardiosis* GME22, volatile organic compounds, antifungal, solid state fermentation