

**KEMAMPUAN RIZOBAKTERI INDIGENOS SEBAGAI  
AGENS ANTAGONIS TERHADAP *Ganoderma boninense*  
PENYEBAB PENYAKIT BUSUK PANGKAL BATANG  
TANAMAN KELAPA SAWIT (*Elaeis guineensis* Jacq.)  
SECARA *IN VITRO***

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**ABSTRAK**

Rizobakteri merupakan salah satu alternatif untuk mengendalikan *Ganoderma boninense* penyebab penyakit busuk pangkal batang tanaman kelapa sawit. Penelitian bertujuan untuk mendapatkan isolat rizobakteri indigenos yang memiliki kemampuan sebagai agens antagonis terhadap *Ganoderma boninense* secara *in vitro*. Pengujian daya hambat rizobakteri indigenos terhadap *Ganoderma boninense* secara *in vitro* dengan metode *dual culture* menggunakan tiga macam media yaitu PDA (*Potato Dextrose Agar*), PDY (*Potato Dextrose Yeast*), dan media campuran (NA+PDA) dengan perbandingan 1:1. Rizobakteri yang digunakan berjumlah 15 isolat yang telah dilakukan pengujian reaksi hipersensitif (HR) dan uji Gram dan produksi enzim kitinase. Hasil penelitian menunjukkan isolat Sjb 3.1.1 merupakan isolat yang mampu untuk menghambat pertumbuhan *Ganoderma boninense* secara *in vitro* dengan persentase daya hambat pada media PDA 37.5%, media PDY 40% dan media campuran 60% dan mampu menghasilkan enzim kitinase.

Kata kunci : *Dual culture*, enzim kitinase, rizobakteri, agens antagonis, *Ganoderma boninense*, *in vitro*.



**THE ANTAGONISTIC ACTIVITY *IN VITRO* OF  
INDIGENOUS RHIZOBACTERIA AGAINST *Ganoderma  
boninense*; WHICH CAUSES BASAL STEM ROT DISEASE OF  
OIL PALM (*Elaeis guineensis* Jacq.)**

**ABSTRACT**

Rizobacteria are an alternative way of controlling *Ganoderma boninense* which causes basal stem rot disease of oil palm plants. The aim of this study was to obtain an indigenous rhizobacterial isolate that has antagonistic activity against *Ganoderma boninense in vitro*. Dual culture inhibitory tests used three types of media: Potato Dextrose Agar, Potato Dextrose Yeast Agar, and a mixed medium (Nutrient Agar:Potato Dextrose Agar at a ratio of 1:1). Fifteen isolates of rhizobacteria were tested for hypersensitivity reactions, Gram stain and production of chitinase enzymes. Isolate Sjb 3.1.1 was capable of inhibiting the growth *in vitro* of *Ganoderma boninense* (37.5% inhibition on Potato Dextrose Agar medium, 40% inhibition on Potato Dextrose Yeast Agar medium and 60% inhibition on the mixed medium tested) and produced chitinase enzymes.

Keywords: Dual culture, chitinase enzyme, rhizobacteria, antagonist agents, *Ganoderma boninense, in vitro*.

