

ABSTRAK

Collethotricum capsici dan *Fusarium oxyporum* merupakan salah satu penyakit pada tanaman cabai. Penyakit tersebut menyebabkan penurunan hasil cabai hingga mencapai $\pm 90\%$. Tujuan penelitian ini adalah diperolehnya isolat rizobakteri yang berpotensi sebagai agen pengendalian hayati terhadap *Collethotricum capsici* dan *Fusarium oxyporum* secara *in-vitro*. Tahapan yang digunakan meliputi isolasi, uji daya hambat terhadap patogen, karakterisasi rizobakteri, dan identifikasi gen 16S rRNA. Rizobakteri yang berpotensi sebagai agen pengendalian hayati diperoleh 11 belas isolat. Isolat OSP4 merupakan isolat yang mempunyai daya hambat terbesar terhadap *Collethotricum capsici* dengan zona hambat sebesar 50% dan daya hambat terhadap *Fusarium oxyporum* 42,85%. Hasil identifikasi gen 16S rRNA menunjukkan isolat OSP4 memiliki homologi 100% dengan *Bacillus cereus*. Karakterisasi mikroskopis menunjukkan OSP4 berbentuk batang, Gram positif dan berwarna ungu.

Kata kunci : Tanaman padi (*Oryza sativa* L.), Rizobakteri, Gen 16S rRNA, *Bacillus cereus*

ABTRACT

Collethotricum capsici and *Fusarium oxyporum* are diseases of chili plants. The disease causes a decrease in chili yields to reach $\pm 90\%$. The purpose of this study was to obtain rhizobacteria isolates that have the potential as biological control agents againts *Collethotricum capsici* and *Fusarium oxyporum in-vitro*. The stages used include isolation, macroscopic and microscopic characteristics, test of inhibition against pathogens and identification of the 16S rRNA gene. Eleven isolates of rhizobacteria that have potential as biological control agents were obtained. OSP4 isolate was the isolate that had the greatest inhibition against *Collethotricum capsici* with an inhibition zone of 50% and inhibition against *Fusarium oxyporum* 42,85%. The result of the identification of the 16S rRNA gene showed that the OSP4 isolate had 100% homology with *Bacillus cereus*. Microscopic characterization showed that OSP4 was rod-shaped, Gram positive and purple in color.

Key words : Rice Plants (*Oryza sativa* L.), Rhizobacteria, 16S rRNA gene, *Bacillus cereus*

