

## Intisari

### **PENAPISAN BAKTERI ANTAGONIS DARI BUAH KAKAO UNTUK MENEKAN PERKEMBANGAN PENYAKIT BUSUK BUAH KAKAO**

Eksplorasi bakteri antagonis yang berasal dari buah kakao untuk menekan perkembangan penyakit busuk buah kakao belum banyak diteliti. Penelitian ini bertujuan untuk mengetahui potensi bakteri antagonis yang berasal dari buah kakao dalam menekan perkembangan penyakit busuk buah kakao. Hasil isolasi dari buah kakao didapatkan bakteri sejumlah 43 isolat. Uji antagonisme secara *in vitro* dilakukan untuk melihat penekanan bakteri terhadap pertumbuhan *Phytophthora palmivora*. Metode yang digunakan yaitu metode kultur ganda. Dari hasil uji antagonis didapatkan sebanyak 35 isolat yang mampu menghambat pertumbuhan *P. palmivora* secara *in vitro*. Level kategori penghambatan dibagi menjadi tiga yaitu lemah, sedang, dan kuat. Isolat B13, B14, B18, B25, B26 dan B27 menunjukkan level penghambatan kuat yang tidak menimbulkan gejala nekrosis pada tanaman tembakau pada uji reaksi hipersensitif. Pengujian selanjutnya yaitu uji antagonis secara *in vivo* antara bakteri B13, B14, B18, B25, B26, dan B27 dengan *P. palmivora*. Parameter yang diamati berupa intensitas penyakit busuk buah kakao. Intensitas penyakit pada perlakuan B13 yaitu 85%, B14 70%, B18 85%, B25 78.33%, B26 58.33%, B27 75%, dan pada kontrol positif 90%. Hasil penelitian menunjukkan isolat bakteri B26 mampu menekan perkembangan penyakit busuk buah kakao secara signifikan jika dibandingkan dengan kontrol.

Kata kunci: Kakao, busuk buah, bakteri antagonis, *Phytophthora palmivora*

*Abstract*

**SCREENING ANTAGONISTIC BACTERIA FROM COCOA FRUITS TO SUPPRESS BLACK POD COCOA DISEASE**

The exploration of antagonistic bacteria which is come from cocoa fruits to suppress black pod disease severity has not been widely studied. This research aimed to know the potential of antagonistic bacteria from cocoa fruits in suppressing black pod disease. From the isolation result, it was obtained 43 bacteria isolates. In vitro antagonism assay was to know bacterial suppression of *Phytophthora palmivora* growth by dual culture method. The result of in vitro antagonism assay was obtained 35 bacteria capable of inhibiting *P. palmivora* growth. The category level inhibition divided into three category weak, moderate, and strong. Bacteria B13, B14, B18, B25, B26 and B27 had strong levels of inhibition did not cause necrotic symptom in tobacco after hypersensitive reactions test were done. Further testing was in vivo antagonism assay bacteria B13, B14, B18, B25, B26, and B27 to inhibit black pod disease of cocoa caused *P. palmivora*. The parameter observed was the disease severity of black pod cocoa. The disease severity in treatment of B13 was 85%, 70% for B14, 85% for B18, 78.33% for B25, 58.33% for B26, 75% for B27, and 90% for positive control. The results showed that B26 bacteria isolates was able to suppress the black pod cocoa disease severity significantly compared with positive control.

Keywords: cocoa, black pod disease, antagonistic bacteria, *Phytophthora palmivora*