

ABSTRACT

ANTIBACTERIAL ACTIVITY TEST OF EXTRACT ENDOPHYTIC FUNGI IN ROOT OF MANGROVE *Avicenna* sp. AGAINST *Vibrio* spp.

By

ANGGUN NOVIKA PUTRI

Vibrio, a bacteria that causes the vibriosis diseases is a pathogenic bacterial and potentially causing a mass mortality in fish farming. The root of mangrove has been shown to have antibacterial activity. This study aimed to 1) screened isolates of endophytic fungi in root of mangrove that had bioactivity to bacteria that caused the vibriosis diseases, 2) obtained an extract of endophytic fungi in root of mangrove *Avicennia* sp. and knew the ability of this inhibition zone extracts against bacteria that caused the vibriosis diseases, 3) identified endophytic fungi in root of mangrove that had bioactivity to bacteria that caused the vibriosis diseases. This study was conducted using exploratory and experimental laboratory methods. The results of the study obtained 11 isolates of endophytic fungi in root of mangrove *Avicennia alba*. Antibacterial activity test used a dual culture method. However, only 4 isolates of endophytic fungi that had antibacterial activity against bacteria *Vibrio parahaemolyticus* and 3 isolates of endophytic fungi that had antibacterial activity against bacteria *Vibrio harveyi*. Extract test is used Kirby Bauer method. The result of the extract test showed that 3 isolates of endophytic fungi had activity against both of bacterias named WB-A02, WB-A03, and PJ-A03. The result of microscopic identification showed that isolate belonged to the genus *Chrysosporium* (WB-A02), genus *Fusarium* (WB-A03), and genus *Penicillium* (PJ-A03). This research further demonstrates the great potential of endophytic fungi in the development of new antibacterial agent.

Keyword: *Antibacterial, root, endophytic fungi, mangrove, vibriosis.*

ABSTRAK

UJI AKTIVITAS ANTIBAKTERI EKSTRAK JAMUR ENDOFIT AKAR MANGROVE *Avicennia* sp. TERHADAP *Vibrio* spp.

Oleh

ANGGUN NOVIKA PUTRI

Vibrio, bakteri penyebab vibriosis merupakan bakteri patogen dan berpotensi menyebabkan kematian masal pada organisme perikanan. Akar mangrove terbukti memiliki aktivitas antibakteri. Penelitian ini bertujuan untuk 1) skrining isolat jamur endofit akar mangrove yang memiliki bioaktivitas terhadap bakteri penyebab vibriosis, 2) mendapatkan ekstrak jamur endofit akar mangrove *Avicennia* sp. Serta kemampuan zona hambatnya terhadap bakteri penyebab vibriosis, 3) identifikasi jamur endofit akar mangrove yang memiliki bioaktivitas terhadap bakteri penyebab vibriosis. Penelitian ini dilakukan menggunakan metode eksploratif dan eksperimental laboratoris. Telah diisolasi 11 isolat jamur endofit dari akar mangrove *Avicennia alba*. Pengujian aktivitas antibakteri menggunakan metode *dual culture* yang dimodifikasi. Terdapat 4 isolat jamur endofit yang memiliki aktivitas antibakteri terhadap bakteri *Vibrio parahaemolyticus* dan 3 isolat terhadap bakteri *Vibrio harveyi*. Uji ekstrak menggunakan metode Kirby Bauer. Hasil uji ekstrak didapatkan 3 isolat memiliki aktivitas terhadap kedua bakteri uji yaitu WB-A02, WB-A03, dan PJ-A03. Secara mikroskopis menunjukkan bahwa isolat yang diidentifikasi masuk ke dalam genus *Chrysosporium* (WB-A02), genus *Fusarium* (WB-A03), dan genus *Penicillium* (PJ-A03).

Kata kunci : Antibakteri, akar, jamur endofit, mangrove, vibriosis.