INTISARI

Eksplorasi mikroba penghasil antimikroba dari bakteri endofit dilakukan akibat semakin terbatasnya antimikroba yang dihasilkan mikroba tanah. Salah satu tanaman potensial sebagai sumber bakteri endofit penghasil antimikroba adalah tanaman bawang merah. Penelitian ini bertujuan untuk mendapatkan isolat bakteri endofit yang menghasilkan senyawa antimikroba terhadap mikroba indikator. Penelitian ini dilakukan dengan metode isolasi, seleksi bakteri endofit, dan karakterisasi senyawa antimikroba. Isolasi bakteri endofit dilakukan dengan metode *spread plating* pada medium nutrien agar yang mengandung nistatin. Seleksi isolat dilakukan dengan uji antagonisme terhadap mikroba indikator dengan *paper disc diffusion technique*. Mikroba indikator yang digunakan adalah *Bacillus subtilis, Candida albicans*, dan *Fusarium oxysporum* f.sp. *cubense*. Karakterisasi senyawa antimikroba dilakukan dengan metode kromatografi kertas. Hasil penelitian menunjukkan 51 isolat bakteri endofit berhasil diisolasi dari tanaman bawang merah. Hasil seleksi berdasarkan uji antagonisme diperoleh 2 isolat terpilih dengan daya hambat terbesar yakni BBDA dan KPAB, daya hambat isolat yang pertama sebesar 10,48 terhadap *Bacillus subtilis* dan daya hambat isolat kedua sebesar 6,20 terhadap *Fusarium oxysporum* f.*sp*. *cubense*. Hasil karakterisasi senyawa antimikroba berdasarkan uji kromatografi kertas memperoleh eluen C (butanol:asam asetat: air = 3:1:1) sebagai eluen terpilih yang mampu mengkarakterisasi senyawa antimikroba yang dihasilkan isolat BBDA dan KPAB dengan nilai Rf masing-masing sebesar 0,3 dan 0,49.

Kata kunci: isolasi dan seleksi, bakteri endofit, antimikroba, karakterisasi senyawa.

ABSTRACT

Exploration of antimicrobial-producing microbes from endophytic bacteria was carried out due to the increasingly limited antimicrobial production of soil microbes. One of the potential plants as a source of antimicrobial-producing endophytic bacteria is onion plant. The aim of this study is to obtain isolates of endophytic bacteria producing antimicrobial compounds against indicator microbes. This research was conducted using methods of isolation, selection of endophytic bacteria, and characterization of antimicrobial compounds. Isolation of endophytic bacteria was carried out by spread plate method on nutrient agar medium containing nystatin. The selection of isolates was carried out by antagonism testing against the indicator microbes using paper disc diffusion technique. The indicator microbes were *Bacillus subtilis*, *Candida albicans*, and *Fusarium oxysporum* f.*sp*. *cubense*. Characterization of antimicrobial compounds was carried out with paper chromatography method. The results of this study showed 51 isolates of endophytic bacteria were successfully isolated from onion plant. The selection results based on the antagonism test were obtained 2 selected isolates with the greatest inhibition are BBDA and KPAB, inhibition of the first isolate is 10.48 against *Bacillus subtilis* and inhibition of the second isolate is 6.20 against *Fusarium oxysporum* f.sp. *cubense*. The results of the characterization of antimicrobial compounds based on paper chromatography showed that eluent C (butanol:acetic acid:water = 3:1:1) as the best eluent which able to characterize the antimicrobial compounds of BBDA and KPAB isolate with Rf values of 0.3 and 0.49.

Key words: isolation and selection, endophytic bacteria, antimicrobial, compound characterization.