

## INTISARI

*Pseudomonas aeruginosa* merupakan bakteri patogen oportunistik penyebab berbagai macam infeksi dan dikenal resisten terhadap berbagai antibiotik. Biji kelor merupakan tanaman yang mudah dijumpai di Indonesia yang mengandung senyawa flavonoid, tannin, steroid, polifenol, terpenoid, alkaloid, dan saponin. Penelitian ini bertujuan untuk mengetahui potensi aktivitas antibakteri ekstrak air biji kelor dibandingkan ekstrak etil asetat biji kelor terhadap bakteri *P.aeruginosa* ATCC 10145.

Uji *Minimum Inhibitory Concentration* (MIC) dilakukan dengan metode mikrodilusi pada *microplate 96-wells* menggunakan konsentrasi bertingkat dari 0,195% hingga 100%. Kontrol positif menggunakan *ciprofloxacin*. Setiap perlakuan dilakukan 5 pengulangan. Pembacaan hasil menggunakan spektrofotometer pada panjang gelombang 540 nm. Persentase penghambatan diperoleh dari perhitungan nilai OD. Data dianalisis menggunakan uji *Mann Whitney* ( $p < 0,05$ ).

Hasil penelitian menunjukkan MIC ekstrak air biji kelor maupun ekstrak etil asetat biji kelor didapatkan pada konsentrasi 50%. Hasil analisis menggunakan *Mann Whitney* menunjukkan kedua ekstrak mempunyai potensi aktivitas antibakteri sama bermakna, serta berpotensi sama secara bermakna dengan *ciprofloxacin*. Kesimpulan penelitian ini adalah ekstrak air biji kelor 50% dan ekstrak etil asetat biji kelor 50% memiliki potensi yang setara dengan *ciprofloxacin* dalam menghambat pertumbuhan *P. aeruginosa* ATCC 10145.

Kata kunci; *Pseudomonas aeruginosa*, Biji kelor, air, etil asetat, MIC

## ABSTRACT

*Pseudomonas aeruginosa* is an opportunistic pathogenic bacterium that causes numerous kinds of infections and it is known to be resilient to several antibiotics. Moringa seeds are vegetations that can be easily found in Indonesia which contain flavonoid compounds, tannins, steroids, polyphenols, terpenoids, alkaloids, and saponins. This study aimed to determine the potential antibacterial activity of the aqueous extract of Moringa seeds compared to ethyl acetate extract of Moringa seeds against *P. aeruginosa* ATCC 10145 bacteria.

The Minimum Inhibitory Concentration (MIC) test was performed by microdilution method on a *96-wells microplate* by means of graded concentrations from 0.195% to 100%. *Ciprofloxacin* was used for the positive control. Each treatment was carried out to the tune of 5 repetitions. The results were interpreted by a spectrophotometer at a wavelength of 540 nm. The percentage of inhibition was obtained from the calculation of the OD value. Thus, the data were analysed under the *Mann Whitney test* ( $p < 0.05$ ).

The results show that the MIC of Moringa seed aqueous extract and Moringa seed ethyl acetate extract was obtained at a concentration of 50%. The analysis using *Mann Whitney* method shows that both extracts have the same potential antibacterial activity and significantly the same potential as that of *ciprofloxacin*. It can be concluded that 50% Moringa seed aqueous extract and 50% Moringa seed ethyl acetate extract have the equal effectiveness to *ciprofloxacin* in constraining the growth of *P. aeruginosa* ATCC 10145.

Keywords: *Pseudomonas aeruginosa*, Moringa seeds, water, ethyl acetate, MIC