

**EFEK SINERGISME AKTIVITAS ANTIBAKTERI KOMBINASI
EKSTRAK ETANOL DAN MINYAK ATSIRI BUAH
ANDALIMAN DENGAN AMOKSISILIN DAN
TETRASIKLIN TERHADAP *Pseudomonas aeruginosa***

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ABSTRAK

Sinergisme merupakan hasil interaksi dari dua kombinasi ditujukan untuk mengatasi resistensi antibiotik. *Pseudomonas aeruginosa* merupakan bakteri dengan tingkat resistensi tinggi terhadap antibiotik, terutama amoksisilin dan tetrasiklin. Penelitian ini bertujuan menentukan efek sinergisme antara ekstrak etanol 70% dan minyak atsiri buah andaliman dengan kedua antibiotik tersebut. Dilakukan uji Konsentrasi Hambat Minimum (KHM), Konsentrasi Bunuh Minimum (KBM), dan nilai Fractional Inhibitory Concentration Index (FICI). Hasil menunjukkan KHM dan KBM ekstrak etanol 70% sebesar 2500 ppm, sementara minyak atsiri secara berturut-turut 2500 ppm dan >2500 ppm. Amoksisilin menunjukkan KHM 125 ppm dan KBM >250 ppm, sedangkan KHM tetrasiklin 62,5 ppm dan KBM 250 ppm. Nilai FICI pada kombinasi ekstrak etanol 70% buah andaliman dengan amoksisilin dan tetrasiklin serta kombinasi minyak atsiri buah andaliman dengan amoksisilin dan tetrasiklin menghasilkan efek sinergis, secara berturut-turut adalah 0,4479; 0,3957; 0,3645; dan 0,2917. Uji statistik menunjukkan tidak terdapat perbedaan signifikan antara kombinasi ekstrak etanol 70% dengan antibiotik dan kombinasi minyak atsiri dengan antibiotik (*Asymp. Sig* 0,704).

Kata Kunci: Amoksisilin, Andaliman, *P. aeruginosa*, Sinergisme, Tetrasiklin

**SYNERGISM EFFECT OF ANTIBACTERIAL ACTIVITY OF
COMBINATION OF ETHANOL EXTRACT AND ESSENTIAL
OIL OF ANDALIMAN FRUIT WITH AMOXCICILLIN
AND TETRACYCLINE AGAINST *Pseudomonas aeruginosa***

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ABSTRACT

Synergism is the result of the interaction of two combinations aimed at overcoming antibiotic resistance. Pseudomonas aeruginosa is a bacterium with a high level of resistance to antibiotics, especially amoxicillin and tetracycline. This study aims to determine the synergistic effect between 70% ethanol extract and essential oil of andaliman fruit with the two antibiotics. The Minimum Inhibitory Concentration (MIC), Minimum Bactericidal Concentration (MBC), and Fractional Inhibitory Concentration Index (FICI) values were tested. The results showed that the MIC and MBC of 70% ethanol extract were 2500 ppm, while the essential oil was 2500 ppm and >2500 ppm, respectively. Amoxicillin showed a MIC of 125 ppm and a MBC of >250 ppm, while the MIC of tetracycline was 62.5 ppm and the MBC was 250 ppm.. The FICI value in the combination of 70% ethanol extract of andaliman fruit with amoxicillin and tetracycline and the combination of essential oil of andaliman fruit with amoxicillin and tetracycline produced a synergistic effect, respectively 0.4479; 0.3957; 0.3645; and 0.2917. Statistical tests showed no significant difference between the combination of 70% ethanol extract with antibiotics and the combination of essential oil with antibiotics (Asymp. Sig 0.704).

Keyword: Amoxicillin, Andaliman, *P. aeruginosa*, Synergism, Tetracycline