ABSTRACT

Aspergillus brunneoviolaceus partial is an endophytic fungi isolated from the roots of the plant *Syzygium aqueum.* The potential of this endophytic fungi is not only beneficial for the host plant, but also beneficial for humans as herbal medicines, one of which is overcoming bacterial resistance to antibiotics. This study aims to determine the effect of the ethyl acetate extract of the fungi *Aspergillus brunneoviolaceus* partial on *Escherichia coli* bacteria and the concentration that can provide antibacterial activity, as well as the research contribution that can be given in learning biology. The type of research used is experimental quantitative research with Completely Randomized Design (CRD). The data obtained were analyzed using the Anova test and Duncan's Real Distance Difference test. There were 5 treatments used, namely positive control (ciprofloxacin), concentrations of 1000 ppm, 500 ppm, 250 ppm, and 125 ppm with 3 repetitions. The result of this research is the formation of an inhibition zone around the paper disc in each treatment. The average diameter of the inhibition zone at a concentration of 1000 ppm was 14.94 mm, a concentration of 500 ppm was 5.89 mm, a concentration of 250 ppm was 11.9 mm and a concentration of 125 ppm was 6.26 mm. The results of the Anova test showed a significant value of 0.04 and Duncan's test showed that the positive control was significantly different from all concentrations except the concentration of 1000 ppm, and the research contribution was in the form of booklets as learning media. This shows that the ethyl acetate extract of the fungi *Aspergillus brunneoviolaceus* partial has an effect on *Escherichia coli* bacteria and at a concentration of 125 ppm it has shown antibacterial activity.

Keywords *:* antibacterial, *Aspergillus brunneoviolaceus* partial, booklet, *Escherichia coli*, ethyl acetate

ABSTRAK

Aspergillus brunneoviolaceus partial merupakan jamur endofit yang diisolasi dari akar tumbuhan *Syzygium aqueum.* Potensi jamur endofit ini tidak hanya bermanfaat bagi tumbuhan inangnya saja, tetapi juga bermanfaat bagi manusia sebagai obat-obatan herbal, salah satunya mengatasi resistensi bakteri terhadap antibiotik. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak etil asetat jamur *Aspergillus brunneoviolaceus* partial terhadap bakteri *Escherichia coli* dan konsentrasi yang dapat memberikan aktivitas antibakteri, serta sumbangsih penelitian yang dapat diberikan dalam pembelajaran biologi. Jenis penelitian yang digunakan merupakan penelitian kuantitatif eksperimen dengan desain Rancangan Acak Lengkap (RAL). Data yang diperoleh dianalisis menggunakan uji Anova dan uji Beda Jarak Nyata Duncan. Terdapat 5 perlakuan yang digunakan, yaitu kontrol positif (*ciprofloxacin*), konsentrasi 1000 ppm, 500 ppm, 250 ppm, dan 125 ppm dengan 3 kali pengulangan. Hasil dari penelitian ini yaitu terbentuknya zona hambat di sekitar kertas cakram pada setiap perlakuan. Rata-rata diameter zona hambat pada konsentrasi 1000 ppm zona sebesar 14,94 mm, konsentrasi 500 ppm sebesar 5,89 mm, konsentrasi 250 ppm sebesar 11,9 mm dan konsentrasi 125 ppm sebesar 6,26 mm. Hasil uji Anova menunjukkan nilai signifikan 0,04 dan uji Duncan menunjukkan bahwa kontrol positif berbeda nyata dengan semua konsentrasi kecuali konsentrasi 1000 ppm, serta sumbangsih penelitian berupa *booklet* sebagai media pembelajaran. Hal ini menunjukkan ekstrak etil asetat jamur *Aspergillus brunneoviolaceus* partial memiliki pengaruh terhadap bakteri *Escherichia coli* dan pada konsentrasi 125 ppm sudah menunjukkan adanya aktivitas antibakteri.

Kata kunci : antibakteri, *Aspergillus brunneoviolaceus* partial, booklet, *Escherichia coli,* etil asetat