

**UJI BANDING PERTUMBUHAN BAKTERI *Escherichia coli*
PADA MEDIA MAC CONKEY AGAR (MCA) DAN EOSIN
METHYLENE BLUE AGAR (EMBA)**

ABSTRAK

Latar Belakang: Pengaruh media dalam perkembangan bakteri sangat beragam dan bisa memberikan hasil yang berbeda terhadap pertumbuhan bakteri. Media MCA dan EMBA merupakan media spesifik dan diferensial untuk pertumbuhan bakteri *Escherichia Coli*. Bakteri *Escherichia coli* merupakan bakteri Gram negatif, fakultatif anaerob, dan non-spore yang menyebabkan diare.

Tujuan: Mengetahui karakteristik morfologi, sel mikroskopis, rerata diameter, selisih rerata diameter, dan perbedaan signifikan koloni bakteri *Escherichia coli* pada media MCA dan EMBA yang inkubasi pada suhu 37°C selama 24 jam.

Metode Penelitian: Eksperimen dilakukan dengan *True Experimental Design* dan *Factorial experimental design*. Subjek penelitian bakteri *Escherichia coli* yang ditumbuhkan pada media MCA dan EMBA dengan pengulangan 30 kali. Pengamatan penelitian meliputi besar diameter dan karakteristik koloni. Pengukuran diameter dilakukan dengan jangka sorong. Data yang diperoleh dianalisis secara statistik dengan *Independent Sampel T-Test*.

Hasil: Rerata hasil pengukuran rerata diameter pada media MCA dan EMBA adalah 2,8 mm dan 1,4 mm. Selisih rerata besar diameter kedua media adalah 1,4 mm. Karakteristik koloni pada media MCA adalah berbentuk iregular, memiliki diameter 1,5 – 4,5 mm, elevasi naik, permukaan koloni bergelombang, berwarna merah muda dengan tepian bergerigi, sedangkan pada Media EMBA adalah berbentuk bulat, memiliki diameter 1,1 – 2,0 mm, elevasi cembung, permukaan koloni halus atau smooth, warna hijau metalik dengan tepian rata.

Kesimpulan: Ada perbedaan ukuran diameter koloni bakteri pada media MCA dan EMBA yang inkubasi pada suhu 37°C selama 24 jam.

Kata kunci: *Escherichia coli*, diameter koloni, karakteristik koloni, *Mac Conkey Agar* (MCA), *Eosin Methylene Blue Agar* (EMBA)

COMPARATIVE TEST OF THE GROWTH OF *Escherichia coli* BACTERIA ON MAC CONKEY AGAR (MCA) AND EOSIN METHYLENE BLUE AGAR (EMBA) MEDIA

ABSTRAK

Reasearch Background: The influence of media on bacterial development is very diverse and can give different results on bacterial growth. MCA and EMBA media are specific and differential media for the growth of *Escherichia Coli* bacteria. *Escherichia coli* bacteria are Gram-negative, facultative anaerobic, and non-spore bacteria that cause diarrhea.

Purpose: To determine the morphological characteristics, microscopic cells, average diameter, difference in average diameter, and significant differences in *Escherichia coli* bacterial colonies in MCA and EMBA media incubated at 37oC for 24 hours.

Research Methods: The experiment was conducted with True Experimental Design and Factorial experimental design. The research subjects were *Escherichia coli* bacteria grown on MCA and EMBA media with 30 repetitions. Research observations included the size of the diameter and characteristics of the colony. Diameter measurements were carried out with calipers. The data obtained were analyzed statistically with the Independent Sample T-Test.

Research Result: The average results of the average diameter measurements on MCA and EMBA media were 2.8 mm and 1.4 mm. The average difference in the diameter of the two media is 1.4 mm. The characteristics of the colonies on MCA media are irregular in shape, have a diameter of 1.5 - 4.5 mm, elevation up, wavy colony surface, pink with serrated edges, while on EMBA Media it is round, has a diameter of 1.1 - 2.0 mm, convex elevation, smooth colony surface, metallic green color with flat edges.

Summary: There is a difference in the size of the diameter of bacterial colonies on MCA and EMBA media incubated at 37oC for 24 hours.

Key word: *Escherechia coli*, colony diameter, colony characteristics, Mac Conkey Agar (MCA), Eosin Methylene Blue Agar (EMBA)