ABSTRAK

ISOLASI DAN IDENTIFIKASI *Escherichia coli* DARI SUSU SAPI MASTITIS SERTA UJI SENSITIVITAS PENISILIN, STREPTOMISIN, DAN GENTAMISIN

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Susu merupakan bahan pangan yang digemari dan memiliki gizi tinggi. Namun, susu disukai oleh bakteri untuk tumbuh salah satunya adalah bakteri *Escherichia coli.* Pada sapi perah, *Escherichia coli* dapat menyebabkan mastitis yang berdampak pada perekonomian peternak. Penggunaan antibiotik menjadi penting karena banyak digunakan untuk pengobatan mastitis. Namun, resistensi antibiotik dapat muncul karena terapi antibiotik yang tidak sesuai. Penelitian ini bertujuan untuk mengetahui senstivitas antibiotik penisilin, streptomisin, dan gentamisin pada susu mastitis.

Sampel diperoleh dari susu sapi mastitis sebanyak 14 sampel dari 14 sapi yang kemudian dilakukan identifikasi bakteri *Escherichia coli* dengan media *Eosin Methylene Blue Agar* (EMB) dan *Escherichia coli* O157:H7 dengan media *Sorbitol Mac-Conkey Agar* (SMAC*)*. Uji sensitivitas dilakukan setelah diperoleh hasil dari identifikasi bakteri, *Escherichia coli* dioleskan menggunakan *cotton swab* pada *Mueller-Hinton Agar* (MHA) kemudian kertas cakram antibiotik ditempelkan pada media tersebut dan diinkubasi pada suhu 37℃ selama 18-24 jam.

Hasil inokulasi didapatkan 92,2 % (13/14) sampel terkontaminasi *E. coli* dan 50% (7/14) sampel terkontaminasi terduga *E. coli* O157: H7. Antibiotik yang sensitif terhadap *Escherichia coli* adalah gentamisin yang menghabat 84,6% (11/13) isolat *E. coli* dan streptomisin yang menghambat 23% (3/13) isolat *E. coli*; sedangkan penisilin memberikan hasil resisten yang menunjukkan pertumbuhan 92,3% (12/13) isolat *E. coli* dan intermediet pada 7,7% (1/13) isolat *E. coli*.

Kata kunci: *Escherichia coli*, gentamisin, mastitis, penisilin, streptomisin.

ABSTRACT

ISOLATION AND IDENTIFICATION OF *Escherichia coli* FROM MASTITIS COW'S MILK AND PENICILLIN, STREPTOMYCIN, AND GENTAMICIN SENSITIVITY TEST.

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Milk is a popular food that is highly nutritious. However, bacteria, including *Escherichia coli*, are attracted to milk and can grow in it. In dairy cows, *Escherichia coli* can cause mastitis, which has economic implications for farmers. The use of antibiotics is important in the treatment of mastitis. However, antibiotic resistance can emerge due to inappropriate antibiotic therapy. This study aims to determine the sensitivity of penicillin, streptomycin, and gentamicin antibiotics in mastitis milk.

The samples were obtained from 14 mastitis cow milk samples, each from different cows. Bacterial identification of *Escherichia coli* was performed using Eosin Methylene Blue Agar (EMB) media, and *Escherichia coli* O157:H7 was identified using Sorbitol Mac-Conkey Agar (SMAC) media. Sensitivity testing was conducted after obtaining the bacterial identification results. *Escherichia coli* was streaked using a cotton swab on Mueller-Hinton Agar (MHA), and antibiotic disks were placed on the media. The plates were then incubated at 37°C for 18-24 hours.

The results of the inoculation showed that 92.2% (13/14) of the samples were contaminated with *E. coli*, and 50% (7/14) of the samples were suspected to be contaminated with *E. coli* O157:H7. The antibiotic sensitive to *Escherichia coli* was gentamicin, inhibiting 84.6% (11/13) of *E. coli* isolates, and streptomycin inhibited 23% (3/13) of *E. coli* isolates; on the other hand, penicillin showed resistant results, with 92.3% (12/13) of *E. coli* isolates showing growth, and one isolate (7.7%) showing intermediate inhibition.

Keywords: *Escherichia coli*, gentamicin, mastitis, penicillin G, streptomycin.