

## ABSTRAK

### UJI SENSITIVITAS ANTIBIOTIK ISOLAT *Escherichia coli* RESISTEN COLISTIN ASAL AYAM PETELUR DI SLEMAN, YOGYAKARTA

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Kolibasilosis merupakan penyakit infeksius yang sering menyerang peternakan ayam di Indonesia. Kolibasilosis pada ayam disebabkan oleh infeksi *Avian Pathogenic Escherichia coli* (APEC) yang menyerang ayam pada berbagai tingkatan umur. Penanganan kolibasilosis umumnya dilakukan dengan pemberian antibiotik. Penggunaan antibiotik yang tidak tepat dapat menyebabkan resistensi bakteri. Colistin kini dilarang digunakan sebagai obat hewan di Indonesia. Penelitian ini bertujuan untuk mengetahui sensitivitas *Escherichia coli* resisten colistin terhadap beberapa antibiotik.

Total 30 sampel swab kloaka dari peternakan ayam petelur di Sleman, Yogyakarta diinokulasi dalam *Buffered Peptone Water* (BPW) selanjutnya ditanam pada *MacConkey Agar* (MCA) dengan dan tanpa colistin pada suhu 37°C selama 18-24 jam. Koloni *Escherichia coli* yang telah teridentifikasi dan resisten colistin berjumlah enam isolat kemudian dipilih secara acak empat isolat untuk diuji sensitivitas terhadap antibiotik ampicilin, streptomisin, amoksisilin, kloramfenikol, tetrasiklin, dan trimetoprim-sulfametoksazol. Diameter zona hambat diukur dan dibandingkan dengan tabel standar zona hambat.

Hasil uji sensitivitas dari empat isolat *Escherichia coli* resisten colistin menunjukkan resisten terhadap ampicilin, amoksisilin, tetrasiklin, trimetoprim-sulfametoksazol (100%); resisten terhadap streptomisin (25%); intermediet terhadap streptomisin (25%); sensitif terhadap streptomisin (50%); dan sensitif terhadap kloramfenikol (100%). Sifat resistensi ganda dimiliki keempat isolat yaitu resistensi ampicilin, amoksisilin, tetrasiklin, dan trimetoprim-sulfametoksazol. Hasil penelitian menunjukkan tingginya penyebaran sifat resistensi dari isolat *Escherichia coli* resisten colistin terhadap beberapa jenis antibiotik.

Kata kunci: *Escherichia coli*, colistin, antibiotik, resisten

## ABSTRACT

### ANTIBIOTIC SENSITIVITY TEST OF COLISTIN-RESISTANT *Escherichia coli* ISOLATES FROM LAYING HENS IN SLEMAN, YOGYAKARTA

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Colibacillosis is an infectious disease that often attacks chicken farms in Indonesia. Colibacillosis in chickens is caused by *Avian Pathogenic Escherichia coli* (APEC), which can attack chickens at various ages. Colibacillosis is generally treated with antibiotics. Inappropriate use of antibiotics can lead to bacterial resistance. Colistin is now prohibited from being used as a veterinary drug in Indonesia. This study aims to determine the sensitivity of colistin-resistant *Escherichia coli* to several antibiotics.

A total of 30 cloacal swab samples from laying hens farms in Sleman, Yogyakarta were inoculated in *Buffered Peptone Water* (BPW) and then cultured on *MacConkey Agar* (MCA) with and without colistin at 37°C for 18-24 hours. Six isolates of *Escherichia coli* have been identified and colistin-resistant, then four isolates were randomly selected to be tested for sensitivity to ampicillin, streptomycin, amoxicillin, chloramphenicol, tetracycline, and trimethoprim-sulfamethoxazole. Diameter of the inhibition zone was measured and compared with the standard inhibition zone table.

The result of an antibiotic sensitivity test of four colistin-resistant *Escherichia coli* isolates showed resistance to ampicillin, amoxicillin, tetracycline, trimethoprim-sulfamethoxazole (100%); resistance to streptomycin (25%); intermediate to streptomycin (25%); sensitive to streptomycin (50%), and sensitive to chloramphenicol (100%). The multidrug resistance of the four isolates was resistant to ampicillin, amoxicillin, tetracycline, and trimethoprim-sulfamethoxazole. The results showed the high spread of resistance properties of colistin-resistant *Escherichia coli* isolates to several types of antibiotics.

Key words: *Escherichia coli*, colistin, antibiotic, resistance