

ABSTRAK

DETEKSI GEN *mcr-2* Escherichia coli RESISTEN COLISTIN PADA LAYER DAN BROILER DI KABUPATEN SLEMAN

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Colibacillosis merupakan penyakit pada ayam broiler maupun layer yang disebabkan oleh bakteri *Escherichia coli*. Penyakit ini menyebabkan penurunan produktivitas ayam sehingga mengakibatkan kerugian ekonomi. Pengobatan *Colibacillosis* pada umumnya menggunakan antibiotik, namun sayangnya penggunaan antibiotik yang kurang tepat dapat mengakibatkan munculnya resistensi. Salah satu antibiotik yang digunakan dalam penanganan *Escherichia coli* adalah colistin. Penelitian ini bertujuan untuk mendeteksi adanya gen *mcr-2* yang bertanggung jawab atas resistensi colistin yang terjadi di peternakan ayam broiler maupun layer yang berada di wilayah Kabupaten Sleman.

Penelitian ini menggunakan sampel berupa swab kloaka ayam sebanyak 62 sampel. Sebanyak 32 sampel didapatkan dari peternakan broiler dan 30 sampel didapatkan dari peternakan layer. Isolasi bakteri resisten colistin menggunakan agar MacConkey terlapis colistin dengan konsentrasi 0,25µg/ ml. Identifikasi bakteri *E.coli* resisten colistin dilakukan menggunakan uji TSIA, IMViC, Urease, dan uji fermentasi karbohidrat.

Hasil deteksi pengujian gen *mcr-2* menggunakan *Polymerase Chain Reaction* (PCR) menunjukkan ditemukan gen *mcr-2* pada tiga peternakan broiler dan tiga peternakan layer di Kabupaten Sleman.

Kata kunci : *Escherichia coli*, colistin, gen *mcr-2*, resistensi

ABSTRACT

DETECTION OF *mcr-2* GENE IN COLISTIN RESISTANT *Escherichia coli* IN BROILER AND LAYER AT KABUPATEN SLEMAN

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Colibacillosis is a disease in broiler and layer caused by *Escherichia coli*. This disease causes a decrease in chicken productivity, resulting in economic losses. Colibacillosis treatment generally uses antibiotics, but unfortunately the inappropriate use of antibiotics can lead to the emergence of resistance. One of the antibiotics used in the treatment of *Escherichia coli* is colistin. This study aims to detect the presence of the *mcr-2* gene which is responsible for colistin resistance that occurs in broiler and layer farms in the Kabupaten Sleman.

This study used 62 samples of chicken cloacal swab. Total of 32 samples were obtained from broiler farms and 30 samples were obtained from layer farms. Isolation of colistin-resistant bacteria using MacConkey agar coated with colistin with a concentration of 0.25µg/ml. The identification of colistin-resistant *E. coli* was carried out using the TSIA, IMViC, Urease, and carbohydrate fermentation tests.

The results of the detection of the *mcr-2* gene test using Polymerase Chain Reaction (PCR) showed that the *mcr-2* gene was found in three broiler farms and three layer farms in Kabupaten Sleman.

Keywords: *Escherichia coli*, colistin, *mcr-2* gene, resistance