

## ABSTRAK

### ISOLASI, IDENTIFIKASI, DAN UJI RESISTENSI *Escherichia coli* DARI SWAB KLOAKA BURUNG FAMILI COLUMBIDAE

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Resistensi antibiotik merupakan masalah penting dalam dunia kedokteran hewan. Data resistensi *E. coli* terhadap antibiotik pada burung peliharaan masih sedikit. Penelitian ini bertujuan untuk memperoleh data resistensi *E. coli* yang diisolasi dari burung famili *Columbidae* terhadap beberapa jenis antibiotik di Daerah Istimewa Yogyakarta.

Sebanyak 14 sampel swab kloaka digunakan dalam penelitian ini. Sampel dikultur pada media *Brain Heart Infusion* (BHI) kemudian diisolasi pada *Eosin Methylene Blue Agar* (EMB). Koloni bakteri yang tumbuh terpisah dan berwarna ungu tua disertai hijau metalik diambil dan dilakukan pengecatan Gram. Koloni terduga *E.coli* diidentifikasi dengan uji biokimia. Dari uji tersebut, didapatkan sembilan isolat *E. coli* yang diuji resistensi antibiotik dengan metode *Kirby-Bauer* terhadap: ampicilin 10µg, sefotaksim 30µg, siprofloksasin 5µg, gentamisin 10µg, tetrasiklin 30µg, dan trimetoprim-sulfametoksazol 25µg. Hasil pengukuran zona hambat dibandingkan dengan standar dari *Clinical Standards Laboratory Institute* (CLSI).

Hasil menunjukkan masing-masing isolat *E.coli* resisten terhadap ampicilin (33%), sefotaksim (56%), siprofloksasin (33%), gentamisin (33%), trimetoprim-sulfametoksazol (22%), dan tetrasiklin (56%). Ditemukan multi drug resistance pada 33% isolat *E. coli*. Disimpulkan bahwa tingkat resistensi isolat *E.coli* dari tinggi ke rendah yaitu sefotaksim, tetrasiklin, ampicilin, siprofloksasin, gentamisin dan trimetoprim-sulfametoksazol. Isolat dari burung merpati dan dedeuk jawa resisten terhadap semua antibiotik dan burung perkutut sensitif terhadap semua antibiotik.

Kata kunci: *Columbidae*, isolasi, *Escherichia coli*, resistensi antibiotik

## ABSTRACT

### **ISOLATION, IDENTIFICATION, AND RESISTANCE TESTS of *Escherichia coli* FROM CLOACCOAL SWABES OF THE COLUMBIDAE FAMILY BIRDS**

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Antibiotic resistance is an important problem in veterinary medicine. Data on resistance of *E. coli* to antibiotics in pet birds is still limited. This study aims to obtain data on the resistance of *E. coli* isolated from Columbidae family birds to several antibiotics in the Special Region of Yogyakarta.

A total of 14 cloacal swab samples were used in this study. The samples were cultured on *Brain Heart Infusion* (BHI) and then isolated on *Eosin Methylene Blue Agar* (EMB). Bacterial colonies that grew separately and were dark purple in color with metallic green were taken and Gram stained. The suspected colonies of *E. coli* were identified by biochemical tests. From this test, nine *E. coli* isolates were tested for antibiotic resistance using the *Kirby-Bauer* method against: ampicillin 10µg, cefotaxime 30µg, ciprofloxacin 5µg, gentamicin 10µg, tetracycline 30µg, and trimethoprim-sulfamethoxazole 25µg. The results of the inhibition zone measurements were compared with the standards from the *Clinical Standards Laboratory Institute* (CLSI).

The results showed that the *E. coli* isolates were resistant to ampicillin (33%), cefotaxime (56%), ciprofloxacin (33%), gentamicin (33%), trimethoprim-sulfamethoxazole (22%), and tetracycline (56%). Multi drug resistance was found in 33% of *E. coli* isolates. It was concluded that the resistance levels of *E. coli* isolates from high to low cefotaxime, tetracycline, ampicillin, ciprofloxacin, gentamicin and trimethoprim-sulfamethoxazole. Isolates from the pigeon and sunda collared dove were resistant to all antibiotics and the turtledove was sensitive to all antibiotics.

**Keywords:** *Columbidae*, isolation, *Escherichia coli*, antibiotic resistance