RESISTANCE OF *Escherichia coli* ISOLATED FROM BROILERS AND ORGANIC BROILERS IN LAMPUNG TO ANTIBIOTICS

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Antibiotic resistance causes a decrease in the effectiveness of treatment, an increase in infection transmission, an increase in mortality, and a significant increase in health care costs. Escheriachia coli is one of the enteric bacteria that causes infection which is resistant to several antibiotics in broiler chickens. This study aims to determine the resistance of E. coli isolated from the coecum of broilers and organic broilers using the disc diffusion method on Mueller-Hinton Agar to antibiotics and to see the difference in the effect of antibiotic resistance in broiler and organic broiler farms against E. coli based on risk factors. This study used a purposive sampling method in the form of chicken coecum taken from one farm in South Lampung Regency and one farm in Metro City, with 10 samples each. The ceocum samples were identified to obtain E. coli isolates and sensitivity tests were carried out to eight antibiotics, namely ampicillin, gentamicin, streptomycin, erythromycin, cephalothin, chloramphenicol, nalidixic acid, and oxytetracycline, using the disc diffusion method. The results of this sensitivity test refer to the Clinical and Laboratory Standards Institute 2021. The resistance of E. coli isolated from the cecum of broilers in South Lampung farms showed a fairly high level of resistance to the antibiotics gentamicin (50%), ampicillin (100%), cephalothin (100%), nalidixid acid (70%), streptomycin (80%), erythromycin (100%), oxytetracillin (80%), and the lowest was the antibiotic chloramphenicol (40%). Resistance in organic broilers in Metro City showed the antibiotics ampicillin (100%), streptomycin (70%), cephalothin (90%), erythromycin (100%), oxytertacycline (50%), the lowest resistance was gentamicin (40%) Nalixid Acid (20%), and chloramphenicol (10%) and there were no differences that affected the resistance of E. coli to antibiotics in broilers and organic broilers based on risk factors which included medication, types of feed, water sources and maintenance methods with a significance value of 0.228 ($p>0.05$). On the observation of the scanning electron microscope test to see the morphology of E. coli bacteria that are resistant to antibiotics and those that are not resistant or sensitive, the results obtained are no difference between the two.

Keywords: Antibiotics, Resistance, Escherichia coli, broilers and organic broilers

RESISTENSI *Escherichia coli* YANG DIISOLASI DARI AYAM PEDAGING DAN AYAM PEDAGING ORGANIK DI WILAYAH LAMPUNG TERHADAP ANTIBIOTIK

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Resistensi antibiotik menyebabkan penurunan efektivitas pengobatan, peningkatan penularan infeksi, peningkatan mortalitas, dan peningkatan biaya perawatan kesehatan yang signifikan. Bakteri *Escherichia coli* merupakan salah satu bakteri enterik penyebab infeksi yang mengalami resistensi terhadap beberapa antibiotik pada ayam pedaging. Penelitian ini bertujuan untuk mengetahui tentang kondisi resistensi bakteri *E. coli* yang diisolasi dari sekum ayam pedaging dan ayam pedaging organik dengan menggunakan metode difusi cakram (*disk diffusion*) pada Mueller-Hinton Agar terhadap antibiotik dan melihat perbedaan pengaruh resistensi antibiotik di peternakan ayam pedaging dan ayam pedaging organik terhadap bakteri *E. coli* berdasarkan faktor resikonya. Penelitian ini menggunakan metode *purposive sampling* berupa sekum ayam yang diambil dari satu peternakan di Kabupaten Lampung Selatan dan satu peternakan di Kota Metro, masing-masing sebanyak 10 sampel. Sampel sekum diidentifikasi untuk mendapatkan isolat *E. coli* dan dilakukan uji sensitivitas terhadap delapan antibiotik, yaitu ampisilin, gentamisin, streptomisin, eritromisin, sefalotin, kloramfenikol, nalidixic acid, dan oksitetrasiklin, dengan menggunakan metode difusi cakram. Hasil uji sensitivitas ini mengacu pada *Clinical and Laboratory Standards Institute* 2021. Resistensi bakteri *E. coli* yang diisolasi dari sekum ayam pedaging di peternakan Lampung Selatan menunjukkan tingkat resistensi yang cukup tinggi pada antibiotik gentamisin (50%), ampisilin (100%), sefalotin (100%), nalidixid acid (70%), streptomisin (80%), eritromisin (100%), oksitetrasilin (80%), dan yang terendah adalah antibiotik klorampenikol (40%). Resistensi pada ayam pedaging organik di Kota Metro menunjukan antibiotik ampisilin (100%), streptomisin (70%), sefalotin (90%), eritromisin (100%), oksitertasiklin (50%), resistensi terendah gentamisin (40%) Nalixid Acid (20%), dan klorampenikol (10%) serta tidak ada perbedaan yang mempengaruhi adanya resistensi bakteri *E. coli* terhadap antibiotik pada ayam pedaging dan pedaging organik berdasarkan faktor resiko yang meliputi pengobatan, jenis pakan, sumber air dan cara pemeliharaan dengan nilai signifikansi 0.228 ($p>0.05$). Pada pengamatan uji *scanning electron microscope* untuk melihat morfologi bakteri *E. coli* yang resisten terhadap antibiotik dan yang tidak resisten atau sensitif, hasil yang diperoleh tidak ada perbedaan antara keduanya.

Kata kunci : Antibiotik, Resistensi, *Escherichia coli*, ayam pedaging dan ayam pedaging organik