

INTISARI

EFIKASI PAKAN TERAPI KOMBINASI LINKOMISIN-SPEKTINOMISIN TERHADAP AYAM BROILER YANG DIINFEKSI *Escherichia coli*

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Kolibasilosis merupakan penyakit yang dapat menyerang organ pernapasan unggas yang diakibatkan oleh *Escherichia coli* yang dapat menyebabkan kerugian bagi peternak. Pulmo dan *air sac* relatif rentan terhadap kolonisasi dan invasi bakteri, termasuk *E. coli*. Bakteri *E. coli* diketahui sudah resisten terhadap beberapa antibiotik. Salah satu cara untuk mengobati *E. coli* pada ayam adalah dengan kombinasi obat antibiotik linkomisin dan spektinomisin. Penggunaan antibiotik melalui pakan terapi memungkinkan pemberian obat yang lebih mudah dan efektif. Penelitian ini bertujuan untuk mengetahui efikasi pemberian pakan terapi kombinasi antibiotik linkomisin-spektinomisin terhadap organ pernapasan ayam broiler yang diinfeksi *E. coli*. Sebanyak 80 ekor *day old chicken* (DOC) dibagi dalam 4 kelompok, masing-masing 20 ekor secara acak, yaitu kelompok kontrol negatif (K-), kelompok kontrol positif (K+), kelompok 1 (K1), dan kelompok 2 (K2). Setiap kelompok diinfeksi dengan (10^9 sel/ml) isolat bakteri *E. coli* sebanyak 1 ml (0,2 ml intratracheal, 0,3 peroral, 0,5 intraperitoneal) dengan menggunakan spuit pada usia 17 hari, kecuali pada kelompok kontrol negatif (K-). K- tidak diinfeksi *E. coli* dan tidak diberikan pakan terapi, K+ diinfeksi *E. coli* dan tidak diberikan pakan terapi, K1 diinfeksi *E. coli* dan diberikan pakan terapi selama 7 hari, K2 diinfeksi *E. coli* dan diberikan pakan terapi selama 14 hari. Ayam dinekropsi pada umur 35 hari. Data hasil hematologi darah ayam dianalisis menggunakan uji *One Way ANOVA*. Analisis patologi makroskopis yaitu *lesion scoring* organ *air sac* dan pulmo menggunakan uji Kruskal Wallis. Analisis gejala klinis dan histopatologi organ pernapasan dianalisa secara deskriptif. Hasil gejala klinis yaitu pakan terapi linkomisin-spektinomisin dapat mengurangi gejala klinis yang berhubungan dengan organ pernapasan ayam. Hasil hematologi menunjukkan perbedaan signifikan yaitu penurunan jumlah leukosit dan heterofil, serta peningkatan jumlah limfosit pada K1 dan K2. Hasil *lesion scoring* organ *air sac* dan pulmo menunjukkan perbedaan yang signifikan yaitu berkurangnya lesi pada kelompok yang diberikan pakan terapi. Gambaran histopatologi K+ menunjukkan adanya sel radang, sedangkan kelompok perlakuan tidak menunjukkan adanya sel radang. Hasil uji *in vitro* K1 dan K2 menunjukkan *E. coli* tidak terisolasi pada media EMBA dan hasil uji sensitivitas dari kombinasi linkomisin-spektinomisin menunjukkan bahwa isolat *E. coli* masih sensitif terhadap antibiotik tersebut berdasarkan hasil diameter zona hambat. Berdasarkan hasil penelitian, dapat disimpulkan bahwa pemberian pakan terapi antibiotik linkomisin-spektinomisin selama 7 dan 14 hari mempunyai efek terapi terhadap infeksi *E. coli* pada ayam.

Kata kunci: Ayam, *Escherichia coli*, organ pernapasan ayam, linkomisin, pakan terapi, spektinomisin.

ABSTRACT

EFFICACY OF LINCOMYCIN-SPECTINOMYCIN COMBINATION MEDICATED FEED ON THE RESPIRATORY TRACT OF BROILER CHICKENS INFECTED WITH *Escherichia coli*

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Colibacillosis is a disease that can attack the respiratory organs of poultry caused by *Escherichia coli* which can cause losses for farmers. Pulmonary and air sacs are relatively susceptible to bacterial colonization and invasion, including *E. coli*. *E. coli* bacteria are known to be resistant to several antibiotics. One way to treat *E. coli* in chickens is with a combination of the antibiotics lincomycin and spectinomycin. The use of antibiotics through medicated feed allows for easier and more effective drug administration. This study aims to determine the effectiveness of providing a combination of lincomycin-spectinomycin antibiotic combination therapy on the respiratory organs of broiler chickens which infect *E. coli*. A total of 80 day old chickens (DOC) were divided into 4 groups, 20 each randomly, namely negative control group (K-), positive control group (K+), group 1 (K1), and group 2 (K2). Each group was infected with (10^9 cells/ml) 1 ml of *E. coli* bacteria isolate (0.2 ml intratracheal, 0.3 orally, 0.5 intraperitoneal) using a syringe at 17 days of age, except for the negative control group (K-). K- was not infected with *E. coli* and was not given medicated food, K+ was infected with *E. coli* and was not given medicated food, K1 was infected with *E. coli* and was given medicated food for 7 days, K2 was infected with *E. coli* and was given medicated food for 14 days. Chickens were necropsied at 35 days of age. Data from chicken blood hematology results were analyzed using the One Way ANOVA. Macroscopic pathology analysis, lesion scoring of the air sac and pulmonary organs using the Kruskal Wallis. Analysis of clinical symptoms and histopathology of respiratory organs were analyzed descriptively. The results of clinical symptoms are that lincomycin-spectinomycin medicated feed can reduce clinical symptoms related to the chicken's respiratory organs. Hematology results showed significant differences, namely a decrease in the number of leukocytes and heterophils, and an increase in the number of lymphocytes in K1 and K2. The results of scoring air sac and lung organ lesions showed a significant difference, namely reduced lesions in the group given therapeutic feed. The K+ histopathology showed the presence of inflammatory cells, while the treatment group did not show the presence of inflammatory cells. The results of the in vitro K1 and K2 tests showed that *E. coli* was not protected in EMBA media and results of the sensitivity test from the lincomycin-spectinomycin combination showed that *E. coli* isolates were sensitive to these antibiotics based on the results of the diameter of the inhibition zone. Based on the research results, it can be concluded that lincomycin-spectinomycin antibiotic therapeutic feed for 7 and 14 days has a therapeutic effect on *E. coli* infections in chickens.

Keywords: Chicken, *Escherichia coli*, lincomycin, medicated feed, respiratory tract, spectinomycin