

ABSTRAK

PENGARUH PEMBERIAN PAKAN CAMPURAN EPIGALLOCATECHIN GALLATE DAN COLISTIN TERHADAP HISTOMORFOMETRI INTESTINUM TENUE, BERAT BADAN, SERTA FCR AYAM BROILER

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Epigallocatechin gallate merupakan senyawa polifenol katekin dalam teh hijau yang berperan sebagai antioksidan, antimikroba, dan antiinflamasi. Sedangkan colistin merupakan antibiotik polimiksin yang digunakan untuk pendorong pertumbuhan, megobati infeksi, dan agen pelindung. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian pakan campuran Epigallocatechin gallate dan colistin terhadap histomorfometri intestinum tenue dikaitkan dengan berat badan dan FCR ayam broiler. Penelitian ini menggunakan *Day Old Chick* broiler yang dipelihara di kandang *closed house*. Ayam dibagi menjadi tiga kelompok dengan jumlah masing – masing 100 ekor. Kelompok NC tidak diberikan perlakuan pada pakan. Kelompok PC diberi perlakuan berupa pakan dicampur Colistin sebanyak 40 ppm. Kelompok T4 diberi perlakuan berupa pakan dicampur dengan imbuhan pakan yang mengandung *Epigallocatechin gallate* sebanyak 150 gram dan *Colistin* sebanyak 40 ppm. Pakan diberikan sesuai fase pemeliharaan secara terjadwal. Air minum diberikan secara *ad libitum* serta dilakukan vaksinasi IBD dan ND-IB. Berat badan ditimbang setiap minggu, sedangkan nekropsi dilakukan pada hari ke-14 dan hari ke-35 untuk mendapatkan sampel usus bagian duodenum, jejunum, dan ileum. Preparat histopatologi dibuat dari sampel usus dengan menggunakan perwarnaan hematoksilin-eosin dan diamati dengan mikroskop cahaya. Tinggi vili dan kedalaman kriptas diukur menggunakan perangkat lunak Image Raster, lalu dihitung rasio tinggi vili dan kedalaman kriptas serta dianalisis secara statistik menggunakan two-way ANOVA. Hasil analisis statistik menunjukkan bahwa kelompok perlakuan memiliki peningkatan rasio tinggi vili dan kedalaman kriptas terbesar dibandingkan kelompok kontrol meskipun perbedaan tersebut tidak signifikan ($p > 0,05$). Berdasarkan data yang didapatkan perubahan rasio histomorfometri usus meningkat namun efisiensi pakan pada akhir pemeliharaan menurun. Hasil penelitian pada kelompok perlakuan menunjukkan pemberian pakan campuran Epigallocatechin gallate dan colistin tidak berpengaruh terhadap histomorfometri intestinum tenue.

Kata kunci: *Antibiotik, Imbuhan pakan, kedalaman kriptas, tinggi vili, rasio vili:kriptas*

ABSTRACT

THE EFFECT OF FEEDING A MIXTURE OF EPIGALLOCATECHIN GALLATE AND COLISTIN ON INTESTINUM TENUE HISTOMORPHOMETRY, BODY WEIGHT, AND FCR OF BROILER CHICKENS

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Epigallocatechin gallate is a catechin polyphenol compound in green tea that acts as an antioxidant, antimicrobial, and anti-inflammatory. Meanwhile, colistin is a polymyxin antibiotic used as a growth promoter, to treat infections, and as a protective agent. This study aims to determine the effect of feeding a mixture of Epigallocatechin gallate and colistin on the histomorphometry of the small intestine associated with body weight and FCR of broiler chickens. This study used Day Old Chick broilers raised in closed cages. Chickens were divided into three groups of 100 birds each. The NC group did not receive any feed treatment. The PC group was given a feed mixed with 40 ppm of Colistin. The T4 group was given a feed mixed with feed additives containing 150 grams of Epigallocatechin gallate and 40 ppm of Colistin. Feed was provided according to the scheduled maintenance phase. Drinking water was provided ad libitum and IBD and ND-IB vaccinations were administered. Body weight was measured weekly, while necropsies were performed on days 14 and 35 to obtain intestinal samples from the duodenum, jejunum, and ileum. Histopathological slides were prepared from the intestinal samples using hematoxylin-eosin staining and observed under a light microscope. Villus height and crypt depth were measured using Image Raster software, then the ratio of villus height to crypt depth was calculated and statistically analyzed using two-way ANOVA. The statistical analysis showed that the treatment group had the greatest increase in the ratio of villus height to crypt depth compared to the control group, although the difference was not significant ($p > 0.05$). Based on the data obtained, changes in the intestinal histomorphometric ratio increased, but feed efficiency decreased at the end of the rearing period. The results of the study in the treatment group showed that feeding a mixture of Epigallocatechin gallate and colistin had no effect on intestinal histomorphometric age.

Key words: Antibiotic, Crypt depth, Feed Additive, villus height, villus: crypt ratio