

EFISIENSI PENGGUNAAN PROTEIN DAN ENERGI AYAM BROILER YANG DIBERI AIR MINUM DENGAN PENAMBAHAN EMULSI MINYAK MAGGOT (*Hermetia illucens*)

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INTISARI

Penggunaan antibiotik pada industri peternakan secara umum digunakan sebagai aditif pakan untuk memacu pertumbuhan ternak. Namun penggunaan antibiotik menimbulkan dampak negatif berupa resistensi antibiotik dan munculnya residu antibiotik pada produk peternakan. Antibiotik alami dapat digunakan sebagai alternatif untuk menggantikan antibiotik sintetik. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian emulsi minyak maggot pada air minum terhadap efisiensi protein dan energi pakan pada ayam broiler. Penelitian ini menggunakan 135 ekor ayam broiler *strain Indian River* yang dipelihara mulai dari *Day Old Chicken* (DOC) hingga umur 35 hari dan dibagi acak ke dalam 5 macam kelompok perlakuan, setiap perlakuan terdiri dari 3 pengulangan dan setiap pengulangan terdiri dari 9 ekor ayam broiler. Perlakuan yang diberikan meliputi air minum tanpa penambahan emulsi minyak maggot (P0), air minum + 25 mg/L antibiotik *bacitracin* (P1), air minum + 10 ml/L emulsi minyak maggot (P2), air minum + 20 ml/L emulsi minyak maggot (P3), dan air minum + 30 ml/L emulsi minyak maggot (P4). Pakan basal yang digunakan pada penelitian ini memiliki kandungan nutrisi yaitu *metabolizable energy* sebesar 3013,05 kcal/kg, protein kasar sebesar 22,17%, lemak kasar sebesar 6,12%, kalsium sebesar 1,21%, dan *phosphor available* sebesar 0,72%. Data konsumsi air minum, konsumsi protein, konsumsi energi, efisiensi penggunaan protein, dan efisiensi penggunaan energi dianalisis statistik menggunakan Rancangan Acak Lengkap (RAL) pola searah berbasis nilai $P < 0,05$ dengan bantuan aplikasi SPSS versi 26. Hasil analisis statistik menunjukkan bahwa penambahan emulsi minyak maggot 10 hingga 30 ml/L serta 25 mg/L antibiotik *bacitracin* dalam air minum memberikan hasil yang sama pada konsumsi air minum, konsumsi protein, konsumsi energi, efisiensi penggunaan protein, dan energi pakan ayam broiler. Dapat disimpulkan bahwa penambahan emulsi minyak maggot pada air minum tidak memberikan pengaruh terhadap efisiensi penggunaan protein dan energi ayam broiler.

Kata kunci: Broiler, Efisiensi energi, Efisiensi protein, Minyak maggot

EFFICIENCY OF PROTEIN AND ENERGY UTILIZATION IN BROILER CHICKENS GIVEN DRINKING WATER WITH THE ADDITION OF MAGGOT OIL EMULSION (*Hermetia illucens*)

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ABSTRACT

The use of antibiotics in the livestock industry is generally employed as feed additives to promote animal growth. However, antibiotic use leads to negative impacts such as antibiotic resistance and the presence of antibiotic residues in livestock products. Natural antibiotics can be used as an alternative to replace synthetic antibiotics. This research aims to investigate the effect of maggot oil emulsion in drinking water on the protein and energy efficiency of feed in broiler chickens. The study utilized 135 Indian River strain broiler chickens raised from Day Old Chicks (DOC) to 35 days old, randomly divided into 5 treatment groups. Each treatment consisted of 3 replications, and each replication included 9 broiler chickens. The treatments given include drinking water without the addition of maggot oil emulsion (P0), drinking water + 25 mg/L bacitracin antibiotic (P1), drinking water + 10 ml/L maggot oil emulsion (P2), drinking water + 20 ml/L maggot oil emulsion (P3), and drinking water + 30 ml/L maggot oil emulsion (P4). The basal feed used in this research contains a nutrient includes metabolizable energy of 3013.05 kcal/kg, crude protein of 22.17%, crude fat of 6.12%, calcium of 1.21%, and available phosphorus of 0.72%. Data on water consumption, protein consumption, energy consumption, protein utilization efficiency, and energy utilization efficiency were statistically analyzed using a Completely Randomized Design (CRD) with a one-way pattern based on a significance level of $P < 0.05$ with the help of SPSS version 26 software. The results of the statistical analysis show that the addition of maggot oil emulsion at 10 to 30 ml/L, as well as 25 mg/L bacitracin antibiotic in drinking water, provide equivalent results in terms of water consumption, protein consumption, energy consumption, protein utilization efficiency, and broiler chicken feed energy. It can be concluded that the addition of maggot oil emulsion in drinking water does not affect the efficiency of protein and energy utilization in broiler chickens.

Keywords: Broiler, Energy efficiency, Protein efficiency, Maggot oil