

ABSTRAK

MODULASI PROFIL BIOKIMIA DARAH BROILER COBB 500 OLEH KOMBINASI FITOBIOTIK DAN LISOZIM SEBAGAI ALTERNATIF AGP (ANTIBIOTIC GROWTH PROMOTER)

Pavicha Trisya Mutiara

22/494094/KH/11235

Penggunaan *Antibiotic Growth Promoter* (AGP) dalam industri perunggasan telah menimbulkan masalah resistensi antimikroba dan residu antibiotik pada produk ternak, sehingga diperlukan alternatif alami yang lebih aman. Penelitian ini bertujuan untuk mengevaluasi pengaruh kombinasi fitobiotik (bawang putih, lempuyang, jahe gajah, dan kunyit) dan lisozim terhadap modulasi profil biokimia darah serta performa produksi ayam broiler, serta menilai potensinya sebagai alternatif AGP. Sebanyak 99 ekor *Day Old Chick* (DOC) strain COBB 500 dibagi menjadi tiga kelompok ($n=33$), yaitu kelompok normal (pakan basal), Kelompok AGP (pakan basal + antibiotik/AGP), dan kelompok perlakuan (pakan basal + kombinasi fitobiotik 10 g/kg dan lisozim 10 mL/kg). Pemeliharaan dilakukan selama 28 hari. Parameter yang diamati meliputi profil biokimia darah, pertambahan bobot badan (PBB), serta *Feed Conversion Ratio* (FCR). Sampel darah diambil pada minggu ke-4 dan dianalisis menggunakan VETSCAN VS2 *Chemistry Analyzer*. Data PBB dianalisis secara deskriptif sedangkan data FCR dan biokimia darah dianalisis menggunakan *One-Way ANOVA* dilanjutkan uji *Tukey HSD*, *Welch's ANOVA* dilanjutkan uji *Games-Howell*, atau uji *Kruskal-Wallis* dilanjutkan *Mann-Whitney* sesuai karakteristik data. Hasil penelitian menunjukkan bahwa pada profil biokimia darah, kelompok perlakuan memiliki nilai *creatinine kinase*, glukosa, globulin, dan asam urat yang lebih rendah dibandingkan kedua kelompok kontrol, sedangkan fosfor dan total protein lebih tinggi ($p<0.05$). Kadar albumin dan asam empedu pada kelompok perlakuan lebih rendah dibandingkan kelompok normal ($p<0.05$), sedangkan *aspartate-aminotransferase* (AST), natrium, kalsium, kalium tidak menunjukkan perbedaan signifikan antar kelompok ($p>0.05$). Nilai PBB pada kelompok perlakuan relatif setara dengan kelompok normal dan lebih tinggi dibandingkan Kelompok AGP. Nilai FCR kelompok perlakuan tidak berbeda signifikan dengan Kelompok AGP ($p>0.05$), namun lebih tinggi dibandingkan kelompok normal ($p<0.05$). Kombinasi fitobiotik dan lisozim berpotensi memperbaiki status fisiologis dan metabolisme ayam broiler serta dapat dikembangkan sebagai alternatif AGP. Pengaruh kombinasi fitobiotik dan lisozim terhadap efisiensi pakan masih terbatas dan memerlukan optimasi lebih lanjut.

Kata kunci: broiler, darah, fitobiotik, lisozim, performa

ABSTRACT

MODULATION OF BLOOD BIOCHEMICAL PROFILES OF COBB 500 BROILERS BY COMBINATION OF PHYTOBIOTICS AND LYSOZYME AS AN ALTERNATIVE TO AGP

Pavicha Trisya Mutiara

22/494094/KH/11235

The use of Antibiotic Growth Promoters (AGPs) in poultry has raised concerns over antimicrobial resistance and antibiotic residues, highlighting the need for safer natural alternatives. This study aimed to evaluate effects of a phytobiotic combination (garlic, lempuyang, ginger, and turmeric) and lysozyme on blood biochemical profiles modulation and growth performance of broiler chickens, and to assess its potential as an AGP alternative. A total of 99 Day Old Chicks (DOC) of COBB 500 strain were divided into three groups (n=33): normal group (basal diet), AGP group (basal diet + AGP), and treatment group (basal diet + phytobiotics 10 g/kg and lysozyme 10 mL/kg). The experiment lasted 28 days. Parameters observed included blood biochemical profiles, body weight gain (BWG), and Feed Conversion Ratio (FCR). Blood samples were collected at week 4 and analyzed using VETSCAN VS2 Chemistry Analyzer. BWG was analyzed descriptively, while FCR and biochemical data were analyzed using One-Way ANOVA, Welch's ANOVA, or Kruskal-Wallis tests accordingly. The results showed the treatment group exhibited significantly lower levels of creatine kinase, glucose, globulin, and uric acid compared to both other groups ($p < 0.05$), while phosphorus and total protein were higher ($p < 0.05$). Albumin and bile acid in the treatment group were lower than in the normal group ($p < 0.05$), while AST, sodium, calcium, and potassium showed no significant differences among groups ($p > 0.05$). Regarding growth performance, BWG in the treatment group was comparable to the normal group and higher than the AGP group. FCR in the treatment group was not significantly different from the AGP group but was higher (less efficient) than the normal group ($p < 0.05$). Combination of phytobiotics and lysozyme has potential to improve physiological and metabolic status in broilers and may serve as a promising alternative to AGPs. Effect of phytobiotics and lysozyme on feed efficiency remains limited and requires further optimization.

Keywords: blood, broiler, lysozyme, performance, phytobiotics