

ABSTRAK

PENGARUH KOMBINASI RUTE TRANSPORTASI TERHADAP BOBOT BADAN, PROFIL HEMATOLOGI, DAN KADAR STRES AYAM BROILER (*Gallus gallus domesticus*) STRAIN COBB

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Transportasi ayam broiler merupakan bagian dari rantai produksi yang dapat menimbulkan stres fisiologis, sehingga memengaruhi kesejahteraan dan produktivitasnya. Penelitian ini bertujuan menganalisis pengaruh transportasi terhadap bobot badan, parameter hematologi, dan kadar kortisol ayam broiler, dengan membandingkan waktu perjalanan siang dan malam. Transportasi dilakukan menggunakan mobil bak terbuka melalui kombinasi jalan provinsi dan kabupaten sejauh ± 87 km, dari Fakultas Kedokteran Hewan UGM ke Klinik Tani Alas Purbo dan kembali, dengan durasi sekitar 3 jam. Pemodelan rute menggunakan perangkat lunak AnyLogic. Sebanyak 240 ekor ayam broiler strain COBB umur 28 hari digunakan, dibagi dalam tiga kelompok: kontrol, perjalanan siang, dan malam, masing-masing terdiri dari 80 ekor. Pengukuran berat badan dilakukan sebelum dan sesudah transportasi, dilanjutkan dengan analisis hematologi dan kortisol di laboratorium Patologi Klinik. Uji statistik meliputi Kolmogorov-Smirnov dan Kruskal-Wallis menggunakan SPSS. Hasil menunjukkan adanya penurunan bobot badan yang signifikan pada kelompok transportasi siang dan malam dibandingkan kontrol ($p < 0,05$). Transportasi siang bila dibandingkan dengan kelompok kontrol menurunkan kadar RBC, MCHC, leukosit, heterofil, limfosit, eosinofil, dan monosit, serta meningkatkan hemoglobin, PCV, MCV, MCH, TPP, fibrinogen, retikulosit, dan basofil. Sementara itu, jika dibandingkan dengan kelompok kontrol, kelompok perjalanan malam menunjukkan penurunan pada RBC, MCHC, fibrinogen, leukosit, heterofil, limfosit, eosinofil, dan monosit, serta peningkatan pada hemoglobin, PCV, MCV, MCH, TPP, retikulosit, monosit, dan basofil. Dibandingkan antar waktu perjalanan, siang dan malam menunjukkan perbedaan signifikan pada bobot badan, RBC, hemoglobin, PCV, MCV, MCH, MCHC, fibrinogen, retikulosit, leukosit, heterofil, limfosit, monosit, dan basofil ($p < 0,05$). Kadar kortisol ayam yang diperjalankan meningkat dibanding kontrol, tetapi tidak berbeda signifikan secara statistik ($p > 0,05$). Berdasarkan hasil penelitian, dapat disimpulkan bahwa transportasi, baik pada siang maupun malam hari, memengaruhi kondisi fisiologis ayam broiler. Oleh karena itu, diperlukan strategi manajemen transportasi yang optimal untuk meminimalkan dampak negatif dan menjaga kesejahteraan serta produktivitas ayam broiler.

Kata kunci: Broiler, Stress Transportasi, Hematologi, Kortisol, Rute Kombinasi

ABSTRACT

EFFECT OF COMBINED TRANSPORTATION ROUTES ON BODY WEIGHT, HEMATOLOGICAL PROFILE, AND STRESS LEVELS IN COBB STRAIN BROILER CHICKENS (*Gallus gallus domesticus*)

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Broiler chicken transportation is a critical component of the production chain that can induce physiological stress, potentially affecting both welfare and productivity. This study aimed to analyze the effects of transportation on body weight, hematological parameters, and cortisol levels in broiler chickens, comparing daytime and nighttime travel. Transportation was conducted using an open-back truck over a combined provincial and district road, covering approximately 87 km from the Faculty of Veterinary Medicine, Universitas Gadjah Mada (UGM), to Klinik Tani Alas Purbo and back, with a total duration of around 3 hours. Route modeling was performed using AnyLogic software. A total of 240 COBB strain broiler chickens aged 28 days were used, divided into three groups: control, daytime transport, and nighttime transport, with 80 chickens per group. Body weight was measured before and after transport, followed by hematological and cortisol analysis in a clinical pathology laboratory. Statistical tests included the Kolmogorov-Smirnov normality test and Kruskal-Wallis test using SPSS.

Results showed a significant decrease in body weight in both transport groups compared to the control ($p < 0.05$). Daytime transport reduced RBC, MCHC, leukocytes, heterophils, lymphocytes, eosinophils, and monocytes, while increasing hemoglobin, PCV, MCV, MCH, TPP, fibrinogen, reticulocytes, and basophils. Nighttime transport also caused reductions in RBC, MCHC, fibrinogen, leukocytes, heterophils, lymphocytes, eosinophils, and increased hemoglobin, PCV, MCV, MCH, TPP, reticulocytes, monocytes, and basophils, compared to control. Significant differences were observed between daytime and nighttime transport for most parameters ($p < 0.05$). Cortisol levels increased in both transport groups but were not statistically different from the control ($p > 0.05$). These findings indicate that both daytime and nighttime transportation affect the physiological condition of broiler chickens. Therefore, optimized transport management strategies are needed to minimize negative impacts and maintain animal welfare and productivity.

Keywords: Broiler, Transportation Stress, Hematology, Cortisol, Combined Route