

Physiological Dynamic of Broiler at Various Environmental Temperatures

E. Kusnadi and A. Djulardi

Faculty of Animal Science, Andalas University, Padang, Indonesia

Abstract :

This experiment was conducted to evaluate the effect of various environmental temperatures and time of sampling on physiological dynamic of broilers. The effect of treatment on level of triiodothyronine hormone (T3), cholesterol, glucose and protein plasma as well as the weight of bursa of Fabricius and spleen in broilers was also estimated. One hundred and forty 14-d old broilers with 500-600 g of body weight were used as materials. The treatments had two factors, the first factors were consisted of five experiment temperatures (25.55±1.45 with feeding ad libitum; 25.55±1.45 with pair feeding as T2; 25.55±1.45 with pair feeding as T3; 29.29±1.27 with feeding ad libitum and 31.59±1.05°C with feeding ad libitum as T1, T1FP1, T1FP2, T2A and T3A respectively) and the second factors were three times of sampling (4, 8 and 16 days after factor of experiment temperature as D4, D8 and D16 respectively). 5 x 3 split plot experimental design was used to analyze the data (five experiment temperatures and three times of sampling). Data collected were analyzed with Analysis of Variance (ANOVA) and Duncan Multiple Range Test (DMRT) was further used to test the significant differences. The experiment resulted that T3 level of T1FP1, T1FP2, T2A and T3A, lower than T1A, meanwhile of D16 and D8 were higher than D4. The cholesterol of T1A was lower than others. Level of glucose of T1A was lower than others too. The weight of bursa of Fabricius of T1A, T1PF1, T1PF2, were higher than T2A and T3A. The weight of spleen of D16 was higher than D8 and D4.

Key Word :

Environmental temperature, triiodothyronine, cholesterol, lymphoid organ

Volume 10, Number 1, - 2011, ISSN 1682-8356