

The Expression of Lipoprotein Lipase Gene with Fat Accumulations and Serum Biochemical Levels in Betong (KU Line) and Broiler Chickens

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Abstract : Betong chicken is a slow growing and a lean strain of chicken, while the rapid growth of broiler is accompanied by increased fat. We investigated the growth performance, fat accumulations, lipid serum biochemical levels and lipoprotein lipase (LPL) gene expression of female Betong (KU line) at the age of 4 and 6 weeks. A total of 80 female Betong chickens (KU line) and 80 female broiler chickens were reared under open system (each group had 4 replicates of 20 chicks per pen). The results showed that feed intake and average daily gain (ADG) of broiler chicken were significantly higher than Betong (KU line) ($P < 0.01$), while feed conversion ratio (FCR) of Betong (KU line) at week 6 were significantly lower than broiler chicken ($P < 0.01$) at 6 weeks. At 4 and 6 weeks, two birds per replicate were randomly selected and slaughtered. Carcass weight did not significantly differ between treatments; the percentage of abdominal fat and subcutaneous fat yield was higher in the broiler ($P < 0.01$) at 4 and 6 week. Total cholesterol and LDL level of broiler were higher than Betong (KU line) at 4 and 6 weeks ($P < 0.05$). Abdominal fat samples were collected for total RNA extraction. The cDNA was amplified using primers specific for LPL gene expression and analysed using real-time PCR. The results showed that the expression of LPL gene was not different when compared between Betong (KU line) and broiler chickens at the age of 4 and 6 weeks ($P > 0.05$). Our results indicated that broiler chickens had high growth rate and fat accumulation when compared with Betong (KU line) chickens, whereas LPL gene expression did not differ between breeds.

Keywords : lipoprotein lipase gene, Betong (KU line), broiler, abdominal fat, gene expression

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