

Effects of early age feed restriction and heat conditioning on heterophil/lymphocyte ratios, heat shock protein 70 expression and body temperature of heat-stressed broiler chickens

ABSTRACT

We examined the effects of early age feed restriction and heat conditioning on heterophil/lymphocyte ratios (HLR), heat shock protein (hsp) 70 expression and body temperature of heat-stressed male broiler chickens. On day (d) 1, chicks were subjected to (1) 60% feed restriction on d 4, 5, and 6 (FR); (2) exposure to $36\pm 1^{\circ}\text{C}$ for 1 h from d 1 to 21 (HT); (3) both FR and HT (FRHT); or (4) control. On d 35, all the birds were exposed to $39\pm 1^{\circ}\text{C}$ for 6 h. Subjecting chicks to FR, HT and FRHT reduced HLR response to the heat challenge. The FR and FRHT birds had improved hsp 70 response and the latter were more hyperthermic than controls during the heat exposure.

Keyword: Heat stress, Early age feed restriction, Heat conditioning, Heterophil/lymphocyte ratio, Heat shock protein 70, Body temperature, Broiler chickens