

## **Dietary selection of fat by heat-stressed broiler chickens**

### **ABSTRACT**

A total of 160 d-old male broiler chicks (Cobb) were brooded for three weeks and then maintained at  $24\pm 1^{\circ}\text{C}$ . Commencing from d 21, chicks were assigned to one of four feeding regimens: (1) diet with 8% palm oil (PO), (2) diet with 8% soybean oil (SO), (3) diet without added fat (control), (4) a choice of PO, SO and control (CH). The diets were formulated to maintain a constant ratio of energy and protein. From d 28 to 41, all birds were exposed to  $34\pm 1^{\circ}\text{C}$ . The PO, SO and CH birds had greater body weight than controls on d 42. The PO but not SO diet reduced mortality rate, body temperature and serum creatine kinase level of broiler chickens during heat exposure. Although the total intake of control, PO and SO diets was not significantly different during heat exposure, the CH birds had lower creatine kinase activity and mortality rate than those provided SO diet but not significantly different from the birds fed control and PO diets. The relative abdominal fat weight and breast intramuscular fat content percentage were significantly lower in the control birds than those of PO, SO and CH groups. There were no significant differences in both parameters among the three latter groups. These findings suggest that the uncertainty of how much dietary fat to put into diets for heat stressed broilers can be overcome by allowing them to select their own consumption.

**Keyword:** Broiler chickens; Dietary fat; Dietary selection; Heat stress