

**Fear-related behaviour, muscle glycogen stores and serum creatine kinase activity in transported broiler chickens as affected by housing and early-age feed restriction.**

**ABSTRACT**

An experiment was conducted to determine the effects of two types of housing systems and early age feed restriction on tonic immobility reaction, muscle glycogen content and serum creatine kinase activity in broiler chickens subjected to road transportation. On day 1, chicks were housed either in windowless environmentally controlled chambers (temperature was set at 32°C on day 1 and gradually reduced to 23°C by day 21) (CH) or in conventional Open-sided Houses (OH) with cyclic temperatures (minimum, 24°C; maximum, 34°C). Equal number of chicks from each housing system were subjected to either Ad libitum feeding (AL) or 60% Feed Restriction on day 4-6 (FR). On day 42, all the birds were crated and transported for 6 h. Birds raised in OH had shorter TI duration and higher muscle glycogen content than those of CH. Subjecting birds to FR shortened TI duration following transportation. Tonic immobility duration increased with duration of transportation while the converse was noted for muscle glycogen content. Serum creatine kinase was not affected throughout the period of study. Collectively, the results suggested that raising birds in OH dampened fear-related behavior and improved muscle glycogen content in response to road transportation under the hot and humid tropical climate.

**Keyword:** Transportation; Tonic immobility; Muscle glycogen; Housing; Broilers; Malaysia.