

## Effects of Traditional Transportation on the Behavior, Welfare, and Blood Profile of Local Chicken: A Case Study in Sudan

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### Abstract

Indigenous chickens are raised in various rural areas in large quantities throughout Sudan. They must be transported over various distances, to centralized slaughter houses or other purposes. In this study, we examined indigenous chicken farmers' perceptions on chicken welfare during transportation linked this clinical examination. A total of 160 indigenous chickens (80 control+ 80 transported with their owners) were participated in this study. Our findings revealed that 69% and 88% of the farmers indicated that they are not knowledgeable about animal rights and animal welfare, respectively. The majority of the farmers 86% reported that they unaware of animal protection laws. Furthermore, the transported chickens significantly ( $p < 0.05$ ) showed long tonic immobility duration compared to control chickens. Moreover, low pecking behavior was significantly ( $p < 0.05$ ) showed in transported chickens compared to control, particularly in the day one of the experiment. In addition; the mean values of glucose, TWBCs, monocytes, basophils, eosinophils, H/L ratio, Hb, MCHC, and PLT were significantly ( $p < 0.05$ ) higher in transported chickens compared to the controls. In addition, TNF- $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IFN- $\gamma$ , IL-17, as well as ROS, MDA, Cort, Glucose, and total cholesterol were significantly ( $p < 0.05$ ) higher in transportation chickens compared to control, while CAT, GSH, ATP, and SOD were significantly ( $p < 0.05$ ) lower in transportation chickens compared to control. We conclude that the traditional transportation of indigenous Sudanese chickens affected their welfare associated with farmers' low perceptions of chicken welfare, and stress induced blood profile changes.

**Key Words:** *Animal welfare, Chicken transportation, Farmers, Oxidative stress*