

EFFECT OF PRE-SLAUGHTER FACTORS ON LIVE WEIGHT LOSSES IN BROILER CHICKENS

R.A.N.R. Jayawardana¹, M.A.A.P. Kumari¹ and
T.G.S. Chathuranga²

¹*Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.*

²*New Anthoney's Farms (Pvt) Ltd, No. 13, Tittapattara, Hanwellla, Sri Lanka.*

The study aimed to evaluate the effects of pre-slaughter factors; transport duration, crate stocking density, lairage holding duration, and their interactions on live weight losses of broiler birds. A total of 1425, 35-day-old, mixed-gender broiler chickens reared in closed houses and transported on eight occasions to the commercial processing plant were considered for the study. The experiment consisted of 15 treatments arranged in a factorial scheme. This arrangement considered transport duration (long, >2 h; medium, 1–2 h and short, <1 h), crate stocking density (high, ≥ 3.75 kg ft⁻² and low, <3.75 kg ft⁻²), and lairage holding durations (long, >30 min; medium, 5–30 min and short, <5 min). Transport duration, crate stocking density, lairage holding duration, and initial, final, and empty crate weight were recorded in five crates per treatment. The data were subjected to a three-way analysis of variance and the Tukey HSD test was employed for pairwise comparison. All the analyses were performed using R software (V.4.3.2). The highest weight loss ($4.32 \pm 0.01\%$) was observed in birds that were held for a longer duration at lairage with low stocking density after being transported for a medium duration. The results showed that there was a significant ($p < 0.05$) interaction effect between transport duration and crate stocking density on the live weight loss of broiler chickens ($p < 0.001$). Further, significantly ($p < 0.05$) higher live weight loss was observed in longer transport durations than the short and medium transport durations. Moreover, an extended holding duration at lairage resulted in significantly ($p < 0.05$) higher live weight loss than the shorter holding duration. The findings indicate that transport duration, crate stocking density, and lairage holding duration are crucial factors that should be taken into account to mitigate economic losses associated with live weight losses of broilers.

Keywords: Lairage duration, Stocking density, Transport duration, Weight loss