

FEED UTILIZATION EFFICIENCY OF SLOW-GROWING INDIGENOUS CHICKEN RAISED FOR MEAT PRODUCTION

K.G.N.H. Kumari¹, G.A.K.N. Getamanna², M.A.A.P. Kumari², W.A.D. Nayananjalie², A.M.J.B. Adikari² and S.C. Somasiri²

¹Postgraduate Programmes, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.

²Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.

Feed utilization efficiency (FUE) is a critical metric assessed through feed conversion ratio (FCR) and residual feed intake (RFI), both essential for devising strategies to reduce high feeding costs in the poultry industry. This study evaluated the FUE of slow-growing indigenous chickens raised for meat production under two systems: the Pasture Raised System (PRS) and the Intensive Rearing System (IRS). The PRS (treatment) included six replicates, while the IRS (control) had three replicates. Both groups were provided with identical cereal-based diets (starter, grower, and finisher), based on age. Daily feed intake (DFI) and weekly body weight were recorded to calculate daily body weight gain (DBWG), FCR, and RFI. Results indicated that DFI was significantly higher ($p < 0.05$) in the IRS group during both the grower (0.069 ± 0.001 kg) and finisher (0.098 ± 0.001 kg) stages compared to the PRS group (0.053 ± 0.001 kg and 0.083 ± 0.001 kg), respectively. Similarly, DBWG was significantly greater ($p < 0.05$) in the IRS group during both grower and finisher stages (18.99 ± 0.66 g and 16.79 ± 0.66 g) than in the PRS group (14.24 ± 0.46 g and 14.72 ± 0.46 g). However, overall FCR values were not significantly different between the two systems (PRS: 4.28 ± 0.20 ; IRS: 4.62 ± 0.28). Further, RFI was negative and significantly lower ($p < 0.05$) in the PRS group during both stages (-0.0206 ± 0.006 kg and -0.0205 ± 0.010 kg per bird) compared to the IRS group (0.0474 ± 0.009 kg and 0.0265 ± 0.014 kg per bird) where it was positive. In conclusion, these findings suggest that birds in the Pasture Raised System consume significantly less feed, making it a more efficient option for meat production compared to the Intensive Rearing System.

Keywords: Cereal-based diet, Feed conversion ratio, Intensive rearing system, Pasture-raised system, Residual feed intake