

Effect of feeding during long transport on welfare of laying pullets

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A study was conducted to test the effects of a newly-developed transport feed (TF) with high water content on pullets transported more than 12 hours. After preliminary tests on farmed pullets, three individual transport trials were conducted, using a total of 330 animals (Lohmann Brown, 16-wk-old, average body weight: 1.384 kg), transported in 48×54×21 cm (length×width×height), metal wire commercial crates, divided into 2 groups. Control pullets were kept without feed and water and loaded at the usual commercial stocking density (8 pullets/crate; 324 cm²/animal), whereas the experimental group had access to TF and were loaded at the same density considering TF surface (7 pullets/crate; 324 cm²/animal). Birds were placed on commercial lorries and transported for 20 hours. Before catching, and at the end of transport, blood samples (15 animals/group at random) were taken from vena ulnaris superficialis and used to determine hematocrit, total protein, sodium, glucose, plasma corticosterone, heterophil/lymphocyte (H/L) ratio, reactive oxygen metabolites (ROMs), total antioxidant power (OXY-TA) and lysozyme. TF consumption as well as changes in body weight and body (cloacal) temperature were also assessed. Mean TF consumption in experimental groups was 67.0 g/animal (12.5 g dry matter and 54.5 g water) with an energy supply of 0.206 MJ/animal. Pullets that had access to TF had lower body weight losses (6.4 vs. 5.2%; P<0.01) and a lower decrease of body temperature (-0.1 vs. -0.3°C; P<0.05), compared with controls. Moreover, TF pullets showed significantly lower plasma corticosterone, lysozyme, sodium and OXY-TA values as well as a reduced heterophil/lymphocyte ratio. Overall, these findings indicate that TF can reduce negative energy balance and stress in pullets during long-distance journeys.

Keywords: pullets, transport, feeding, animal welfare, physiological indicators