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Thermal comfort conditions during broiler transport

Paulo G. de Abreu*[1], Vivian Feddern[1], Arlei Coldebella[1], Poliana Pasinato Rigo[2]
[1]Embrapa Suínos e Aves, Concórdia/SC, Brasil; [2]Universidade do Contestado, Concórdia/SC, Brasil
*Doctor – paulo.g.abreu@embrapa.br

During transport, broilers are subjected to different stress conditions, which impact directly on welfare, product quality, and in most cases on transport losses. Among the stressor factors, thermal conditions are the most important. Therefore, the objective of this research was to evaluate the thermal comfort conditions of broilers since transport until the slaughterhouse. Data were collected in the West region of Parana state, Brazil. Six loadings were evaluated from 42-day-old broilers raised in dark house system with dimensions of 130 m x 14 m, containing 24,600 COBB lineage broilers, 50% male and 50% female. Each truck had 432 boxes containing 8 broilers/box, totaling 3,456 broilers. The distance between the poultry farm and the slaughterhouse was 24 km. Temperature and air humidity data in each truck were collected in 27 positions (dataloggers were set to record data each 15 min placed in front, in the middle and in the backside of the truck). Based on the average data of each record position, isoline maps were built considering temperature and air humidity, using SURFER® software. There was heterogeneity of temperature and air humidity. The center of the truck was pointed out as the most critical location in terms of thermal comfort. According to some authors, this heating is due to low ventilation. When the truck is moving, air moves up and towards the backside of the truck, causing warming in certain areas. In the longitudinal direction, the left side of the truck (driver's side) presented higher temperature values than the right side (passenger side). This fact occurred because loadings were done in the morning and therefore, the left side of the truck received more solar radiation during broiler transport to the slaughterhouse. Air humidity, on the other hand, was more pronounced in the front of the truck. When the truck is analyzed transversely, the front side showed lower temperature values. The middle of the truck had higher temperature values than the front and backside of the truck. The high temperature areas may vary according to the period of the day and year, the truck load deck and also the handling practices adopted by the farmer.

Keywords: aviculture, broiler, stress, slaughterhouse