

Broiler chicken meat inspection data in Southern Brazil: an animal welfare approach

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The Federal Inspection Service (SIF) of the Brazilian Ministry of Agriculture, Livestock and Supply (MAPA) undertakes meat inspection at slaughterhouses, but outcomes have not been used for animal welfare surveillance. We assessed condemnation data from broiler chicken slaughterhouses in Southern Brazil to evaluate their potential use as animal welfare indicators (AWI). Data from January 2010 to December 2015 in the states of Paraná (PR), Santa Catarina (SC) and Rio Grande do Sul (RS) were used. Correlation of AWI was tested using Spearman rank correlation test. Principal Component Analysis (PCA) was used to explore variance and covariance structures of AWI. Fractures and bruising were recorded together, and they represent the most prevalent welfare problem (PR, 22.1%; SC, 16.6%; RS, 23.7%), followed by skin lesion or inflammation (PR, 14.8%; SC, 9.1%; RS, 9.1%). Footpad dermatitis is not officially controlled since affected feet might be accepted as lower grade product. In PR, progressive increase on injury, arthritis, ineffective bleeding, and airsacculitis may reveal important welfare aspects. High correlation between AWI within PR was more commonly observed than in RS and SC, perhaps because of earlier implementation of local SIF standardization. PCA showed changes on condemnation data pattern in PR after standardization, pointing injury and *Escherichia coli* problems as main causes for condemnation related to animal welfare. They were strongly related to component 1, representing 39.4% of data variability. It seems crucial to update and standardize data collection to set a routine that allows risk analysis regarding both food safety and animal welfare. There is considerable potential to improve animal welfare assessment using SIF structure that is already in place for food safety purposes. In this regard, cooperative work between SIF and companies seems an interesting approach to promote transparency of production process, which would benefit society and animals.