

Importance of traumatic injuries observed during the *post mortem* inspection of broiler

Maria Beatriz Remoaldo¹, Elisete Correia², Madalena Vieira-Pinto^{1,3}

¹Department of Veterinary Sciences, UTAD, Portugal, remoaldobeatriz@gmail.com
²Center for Computational and Stochastic Mathematics (CEMAT), Dep. of Mathematics, IST-UL, Av. Rovisco Pais 1, 1049-001 Lisboa, Portugal, ecorreia@utad.pt
³Animal and Veterinary Science Center, UTAD, Portugal mmvpinto@utad.pt

Introduction and Objectives

The implementation of Directive 2007/43/EC requires the use by Official Veterinarians of an assessment system for poultry welfare at the abattoir level. Under this purpose there are several parameters that can be analysed by Official Veterinarians, such as traumatic injuries. Despite this, in some countries, such as Portugal, injuries are only assessed and recorded when they are extensive leading to total condemnations. For this reason, the main objective of this study was the detailed characterisation of all traumatic lesions observed during the *post mortem* inspection of broilers.

Materials and Methods

In this study, during meat inspection, were analysed 243282 broilers, from 38 batches. Data regarding traumatic lesions was collected: location (Figure 1), age, dimension, presence/absence of fracture and meat inspection judgment (total or partial condemnation). For the parameters dimension and age were applied specific scores (Table 1 and 2, respectively). Besides this data, the general information about the each batch was registered: age, weight, cumulative mortality rate (CMR), deaths on arrival (DOA) and total condemnation by disease (TCD), to study possible correlations with the traumatic lesions.

Results and discussion

As main results, the authors would like to underline that the percentage of injuries found was 2.87% (N=2872). From these, 56.89% (N=1634) presented a fracture too, and the majority was caused *ante mortem* (82.93%; N=1355). The wing stands out as the main place of occurrence of these injuries (83,85%) and the majority of lesions (67,45%) were recent (± 2 minutes), referring to problems in hanging the broilers on the slaughter line (table 1). For this reason, the training of hanging teams should be reinforced, ensuring a calm place, with low light intensity and a careful handling of the birds, especially the heaviest ones in which the hooks can be tight to the feet. All stress, pain or discomfort at this stage can result in vigorous wing flapping that can lead to trauma.

In this study it was also observed the influence of age ($r=0,513$; $p=0,001$) and weight ($r=0,402$; $p=0,012$) on the predisposition to a greater occurrence of traumas, so more attention should be carried in the handling of these animals.

It should be noted that, in Portugal, according to the Competent Authority (DGAV, 2011), only extensive injuries (2.28%) are counted at the abattoir level for the evaluation of the animal welfare. But, according to our study, most injuries recorded (97.72%) were partial, not being accounted for by the Official Veterinarian, contributing to an undervaluation of this parameter. For this, in the future, we suggest that attention should also be paid to partial rejections caused by traumatic injuries.

Besides this, economically partial condemnations by traumatism ($\pm 67802\text{€}/\text{year}$) have a higher impact than the ones associated to total condemnations ($\pm 25919\text{€}/\text{year}$).

Conclusions

The results found allow us to understand the importance to assess in more detail the traumatic injuries as indicators of animal welfare, in order to implement more targeted mitigation strategies to correct specific problems and reduce economical losses (e.g. hanging, catching). This assessment should include the traumatic injuries that leads to a partial condemnation that, presently in Portugal, are not registered by the Official Veterinarian despite representing the majority of this lesions. It's also important to stablish a maximum limit for the occurrence of this parameter. More studies should be developed to evaluate the main risk factor related to traumatic injuries.

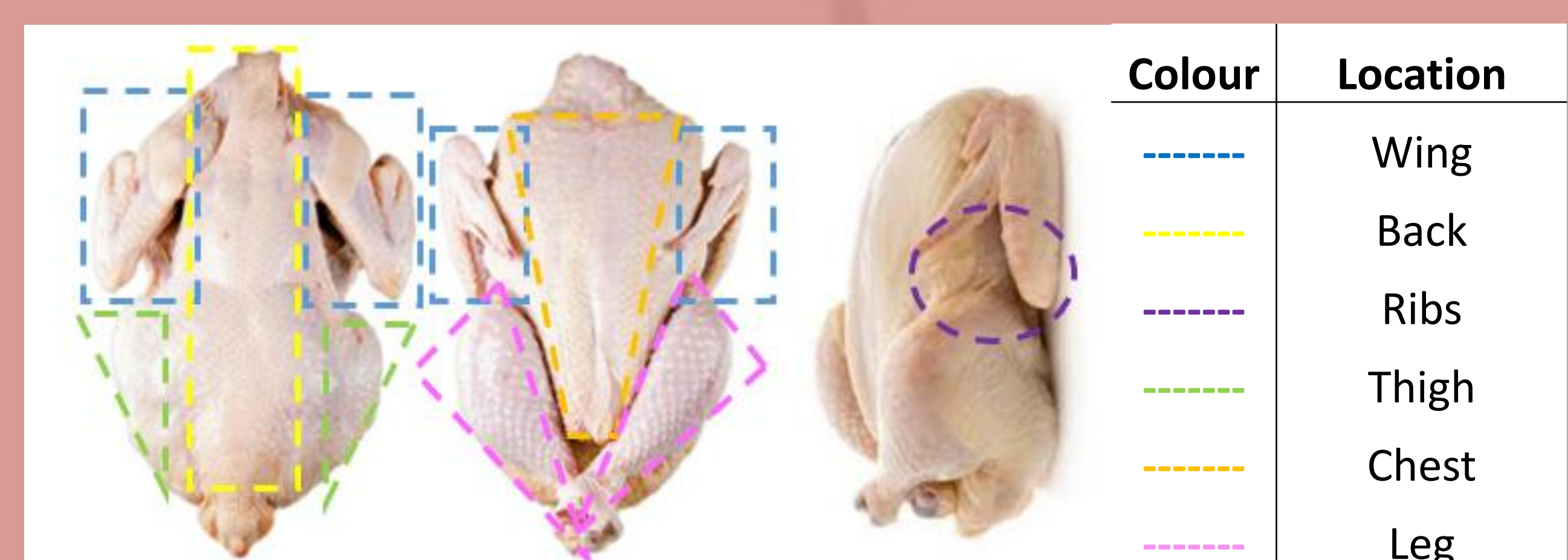


Figure 1. Schematic figure of the traumatic injuries location.

Score	Colour	Approximate time of lesion	Meaning
1	Red	2 minutes	Hanging
2	Dark red	12 hours	Catching/Loading /Transport
	Light green	24 hours	
3	Yellow/light green	36 hours	farm
	Yellow/green	48 hours	
	Yellow/Orange	72 hours	
	Light yellow	96 hours	

Table 1. Score used for the characterization of the age of the lesion. Adapted from DGAV (2011).

Score	% of the affected location
1	< 10%
2	10 – 20%
3	20 – 50%
4	> 50%

Table 2. Score used for the classification of the dimension of trauma.

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