

Evaluation of a scheme based on welfare indicators in heavy pigs at abattoir

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Introduction: Valuable inputs for veterinarians and farmers may be given by on-farm evaluation of pig welfare. However, such activity can result expensive and time-consuming. Therefore, some protocols have been proposed for the determination of pig welfare at the slaughterhouse to eventually implement specific interventions and/or to adjust on-farm practices based on the welfare outputs. Tail and skin lesions recorded at the slaughterhouse are increasingly recognized as 'iceberg' indicators mirroring welfare issues on farm. In particular, these types of lesions, developed during the rearing cycle, can represent a warning signal for different welfare issues, such as resting or thermal discomfort. Tail lesions appear to be visible on the carcass regardless of the time when the lesions occurred during the lifetime of the pigs. On the other hand, severe skin damage occurring up to 11 weeks prior to slaughter remains visible on pig carcasses, although such lesions may appear mild on the carcass (Carroll et al., 2018).

The aim of the present study was to evaluate a welfare score system based on these indicators in heavy pigs (~160 kg live weight) slaughtered in an Italian commercial slaughterhouse during a three-month period.

Materials and Methods: A 5-points and a 4-points scale scoring systems were applied to classify tail and skin lesions, respectively. Presence/absence of ear lesions and paravertebral abscesses were also included in the scheme, but the latter was not analyzed further due to low occurrence. We obtained data from 108 batches belonging to 70 farms, for a total of 11908 pigs. These were divided into two categories based on the length of the tails, for a total of 81 batches with docked-tail pigs and 27 batches with undocked-tail pigs. Overall batch-level scores for scored lesions (tail, anterior skin, posterior skin) were calculated as $\sum (\text{proportion of pigs with score } i \times \text{score } i)$. Differences between docked and undocked batches in batch-level scores and in the proportion of pigs showing ear lesions were assessed through Mann-Whitney U tests.

Results: Tail lesions scores in undocked batches (median: 0.47; IQ range: 0.27) were significantly higher than in docked batches (0.06; 0.10) (U=2471; Z=7.09; p<0.0001). The proportion of pigs showing ear lesions was conversely lower in undocked (median: 0.01; IQ range: 0.03) than docked batches (0.03; 0.05) (U=1100; Z=-2.64; p=0.008). There was no difference between the two groups in either anterior skin lesions or posterior skin lesions scores (both p>0.05).

Conclusions: Our findings support the use of tail lesions and ear lesions as reliable indicators of pig welfare at the abattoir.

Acknowledgements and Financial support statement: The project was financed by the Italian Ministry of Health

References:

Carroll G.A.; Boyle L.A.; Hanlon A.; Collins L.; Griffin K.; Friel M.; Armstrong D.; O'Connell N.E. (2018) What can carcass-based assessments tell us about the lifetime welfare status of pigs? *Livestock Science*, 214, 98-105.