

TAIL ASSESSMENT IN PIGS AT THE ABATTOIR: WHAT ARE WE MISSING?

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Introduction

Tail biting is recognized as a major welfare problem in pig production. The European Union has stated its position regarding tail docking practices, encouraging all Member States to establish standards for the protection of pigs as well as measures to reduce the need for tail docking as a preventive measure. Tail lesions are also known to be a port of entry for pyogenic bacteria to access the bloodstream. Since it can take up to weeks for the abscesses to develop, by the time the pig reaches the abattoir, it is possible to encounter carcasses with both purulent osteomyelitis and/or multiple abscesses and an apparently healed tail. This study aimed to explore the relationship between tail biting lesions and tail length, production system, and carcass condemnations.

Materials and Methods

Data on a total of 9189 pigs with different tail lengths (undocked, docked mid-length, fully docked) and from distinct production systems (conventional, conventional without the administration of antimicrobials, organic) were collected. Total and partial carcass condemnations were registered. It was only viable to classify a subset of 3636 animals, who had their tail classified by two scores (Figure 1):

- lesion score – which evaluated recent tail lesions;
- scarring score - which evaluated scarred tissue.



Figure 1: Tail classification scores. The lesion score: NL – no lesion; ML – mild lesion; SL – severe lesion. The scarring score: MS – mild scarring; SS – severe scarring.

Results

Batches with higher lesion scores had a greater chance of total condemnation and were even more associated with scarred lesions. The within-batches probability for local condemnation due to abscesses increased significantly with higher scarring scores (Table 1). The probability of observing tail lesions also varied with tail length, with undocked pigs having higher odds of showing severe lesions. Regarding husbandry systems, organic farms had a higher probability of total condemnation when compared to the other two production systems (Table 2).

Table 1: Statistical model exploring the relationship between total condemnations, local condemnations due to abscess with the lesion and scarring score from the slaughtered animals (9189 pigs). CI – confidence interval

Response variable	Explanatory variable	Statistics	P value	Odds Ratios	
				Estimate	95% IC
Total condemnations	Lesion score	$\chi^2_1=5.98$	0.0145	1.81	1.12 – 2.91
	Scarring score	$\chi^2_1=13.81$	0.0002	3.24	1.74 – 6.02
Local condemnations due to abscess	Lesion score	$\chi^2_1=0.50$	0.48		
	Scarring score	$\chi^2_1=44.69$	<0.0001	3.65	2.50 – 5.34

Table 2: Statistical model exploring the relationship between lesion scores and total condemnations with the production system and tail length in the total study population (9189 pigs). CI – confidence interval.

Response variable	Explanatory variable	Statistics	P value	Odds Ratios		
				Estimate	95% IC	
Lesion score	Production system	$\chi^{22}=3.13$	0.21			
	Tail length	$\chi^{22}=18.35$	0.0001	undocked vs docked	3.11	1.83 – 5.30
				undocked vs docked mid-length	2.10	1.01 – 4.39
				docked mid-length vs docked	1.48	0.83 – 2.65
Total condemnations	Production system	$\chi^{22}=7.27$	0.0263	organic vs conventional	2.27	1.07 – 4.81
				organic vs conventional without antimicrobials	4.36	1.38 – 13.7
				conventional without antimicrobials vs conventional	0.52	0.19 – 1.40
	Tail length	$\chi^{22}=0.06$	0.97			

Conclusion

As both tail scores increased, the probability of observing total condemnation was higher. Overall, the scarring score displayed a more relevant role than the scoring system for recent lesions. Scarred lesions can also work as a welfare indicator regarding farm conditions and should be included in the tail surveillance program. Undocked pigs were more likely associated with severe tail lesions and abscess condemnations. Thus, the disuse of the docking procedure should be carefully assessed. It has been argued that organically raised pigs experience higher levels of animal welfare due to less intensive production conditions. However, it has been observed that even in organically raised pigs, tail biting can occur.

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