Docking the value of pig meat? Prevalence and financial implications of welfare lesions in Irish slaughter pigs

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Abstract

Expansion of the meat inspection process to incorporate animal-based welfare measurements could contribute towards significant improvements in pig (Sus scrofa domesticus) welfare and farm profitability. This study aimed to determine the prevalence of different welfare-related lesions on the carcase and their relationship with carcase condemnations (CC) and carcase weight (CW). The financial implications of losses associated with CC and CW reductions related to the welfare lesions were also estimated. Data on tail lesions, loin bruising and bursitis, CW and condemnation/trimming outcome (and associated weights) were collected for 3,537 slaughter pigs (mean [± SEM] carcase weight: 79.2 [± 8.82] kg). Overall, 72.5% of pigs had detectable tail lesions, whilst 16.0 and 44.0% were affected by severe loin bruising and hind limb bursitis, respectively. There were 2.5% of study carcases condemned and a further 3.3% were trimmed. The primary cause of CC was abscessation. While tail lesion severity did not increase the risk of abscessation, it was significantly associated with CC. Male pigs had a higher risk of tail lesions and of CC. The financial loss to producers associated with CC and trimmings was estimated at €1.10 per study pig. CW was reduced by up to 12 kg in cases of severe tail lesions. However, even mild lesions were associated with a significant reduction in CW of 1.2 kg. The value of the loss in potential CW associated with tail lesions was €0.59 per study pig. Combined with losses attributable to CC and trimmings this represented a loss of 43% of the profit margin per pig, at the time of the study, attributable to tail biting. These findings illustrate the magnitude of the impact of tail biting on pig welfare and on profitability of the pig industry. They also emphasise the potential contribution that the inclusion of welfare parameters at meat inspection could make to pig producers in informing herd health and welfare management plans.

Keywords: animal welfare, carcase, economics, meat inspection, pig, tail biting

Introduction

It is widely accepted that the most valid approach to animal welfare assessment is to focus on the animal rather than its environment (Keeling & Veissier 2005; Smulders et al 2006; Main et al 2007). Consequently, assurance schemes increasingly measure ‘welfare outcomes’ such as the prevalence of skin lesions in pigs (Sus scrofa domesticus) (Velarde & Geers 2007). Atabbor meat inspection involves examination of each carcase and, hence, presents an ideal opportunity to measure animal-based welfare outcomes (Harley et al 2012a). The extensive use of meat inspection data in epidemiological studies over a number of decades corroborates this (Cleveland-Nielsen et al 2004; Mullan et al 2011; Swaby & Gregory 2012). Additionally, meat inspection is a cost effective means of collecting data over long time-periods as it is a continuous practice which is already in place (Huey 1996; Cleveland-Nielsen et al 2004). For this reason, and also for biosecurity reasons, it has advantages over welfare inspections of pigs at farm level.

Tail biting is a major welfare problem in modern pig farming systems. In spite of a ban on routine tail docking, many pigs are still tail docked in EU countries (eg Harley et al 2012b) in an attempt to control tail biting. There have been extensive investigations into the epidemiology and consequences of tail biting (Wallgren & Lindahl 1996; Moinard et al 2003; Sinisalo et al 2012). Its reported association with carcase disease lesions, decreased carcase weights and condemnations at slaughter means that it has adverse economic implications for producers (Huey 1996; Valros et al 2004; Kritas & Morrison 2007; Heinonen et al 2010). Furthermore, tail wounds are an important welfare outcome measure (EFSA Panel on Animal Health and Welfare 2007) as lesions seen at slaughter can generally be attributed to practices at farm level. Indeed, a recent technical report to EFSA on the future development of animal-based measures for assessing the welfare of pigs recommended that tail length and injury status be monitored in slaughter pigs (Spoolder et al 2011).