The welfare of growing pigs in five different production systems in France and Spain: assessment of health

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Abstract

This study was carried out to compare the health of growing pigs in five different production systems in France and Spain using measures provided by the Welfare Quality® protocol. A total of 11,647 pigs housed on 91 commercial farms were evaluated over a two-year period (2007–2009). Farms considered as conventional were close to the European dominant production system, rearing ‘white’ pigs (eg Large White; Landrace × Pietrain) housed on concrete floors. Systems considered as differentiated had specifications to distinguish them from the conventional one. Farms that housed ‘white’ breeds of pigs on straw were then considered as a different production system. Mallorcan Black pigs managed extensively on family farms in the Balearic islands represented a third production system. The remaining two systems assessed were represented by the methods used for Iberian pig rearing extensively or intensively. Multiple Generalised Linear Mixed Models were performed for each animal-based measure of health. The straw-bedded and the conventional systems did not differ in the prevalence of any animal-based measure. Mallorcan Black pigs and Iberian pigs kept extensively had a lower prevalence of severe wounds than pigs in the conventional system and the lowest prevalence of tail biting. Focusing on pigs housed in the conventional system, several possible causal factors (such as the feeding system and the type of floor) were identified relating to severe wounds, tail biting and lameness. Therefore, the recording of simple environmental-based factors can be useful in detecting farms that are more likely to show these problems.

Keywords: animal welfare, causal factors, growing pig, health, housing systems, Welfare Quality®

Introduction

Health refers to the state of the body and brain in relation to the effects of pathogens, parasites, tissue damage or physiological disorder. Since all of these effects involve pathology (that is the detrimental derangement of molecules, cells and functions that occurs in living organisms in response to injurious agents or deprivations), the health of an animal is its state as regards its attempts to cope with pathology (Broom 2006). Health is, therefore, a significant component of welfare (Broom 2010) and must be considered properly in a welfare assessment. The Farm Animal Welfare Council (1992) provides a narrower definition of health as the absence of pain, injuries or diseases. Injuries and diseases can cause acute or chronic pain which, in turn, is defined as an aversive emotional experience (Molony & Kent 1997; Rainville 2002). It should be emphasised that a light difficulty in coping with pathology may not be detected using this previous definition.

Animal health depends on several influencing factors and may vary according to the production system. For growing pigs, farms with concrete floors and relatively high stocking densities greatly predominate throughout Europe and can be considered as conventional. Recently, consumer concerns regarding animal welfare have led to a growing interest for alternative production systems. Several studies have been conducted to compare the prevalence of health indicators — such as skin lesions, tail biting and lameness — in conventional-system and straw-bedded accommodation (Lyons et al 1995; Guy et al 2002; Scott et al 2006; Courboulay et al 2009). At present, around 7% of growing pigs in France are housed on straw bedding while very few Spanish farms use deep-litter systems because of its a priori incompatibility with high environmental temperatures and limited availability of the material. Pigs housed on conventional and straw-bedded farms are usually ‘white’ breeds of pigs selected for their high growth speed or high conversion index and their adaptability for indoor husbandry. At the same time, increasing attention is being given to outdoor production systems, which are usually found in specific geographical areas. Mallorcan Black and Iberian pigs represent approximately 15% of the