Assessing the welfare level of intensive fattening pig farms in Germany with the Welfare Quality® protocol: does farm size matter?

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Abstract

The housing condition of pig (Sus scrofa) fattening farms are increasingly receiving criticism, because they are associated with impaired animal welfare. Consumers view the increase in farm sizes critically, even though scientifically based knowledge on the relationship between farm size and welfare is still limited. Therefore, the aim of this study was to assess the welfare level of conventional fattening pig farms in Germany and to evaluate the relationship between farm size and animal welfare level. In total, the Welfare Quality® protocol (WQ) for pigs was applied on 60 farms. Farms were classified according to their size into small (< 1,500 pigs per farm), medium (1,500–3,000 pigs per farm) and large (> 3,000 pigs per farm). Independent of the farm size, the overall WQ classifications ‘excellent’ and ‘not classified’ were not recorded in any of the farms, while ‘enhanced’ and ‘acceptable’ was achieved by 80 and 20% of the farms, respectively. Farm sizes had no effect on any of the four principles ‘good feeding’, ‘good housing’, ‘good health’ or ‘appropriate behaviour’. Overall, moderate bursitis (35%) was found to be the most prevalent indicator of welfare-related problems. However, it did not differ between farm sizes. Another highly prevalent indicator, moderately soiled body, increased from 11.1% in small- to 20.8% in large-sized farms. In conclusion, our findings show that none of the farm sizes were superior in terms of animal welfare. Overall, acceptable or enhanced scores were achieved for many of the criteria, however the need for improvement in other criteria such as ‘expression of other behaviour’ and ‘positive emotional state’, was clear.

Keywords: animal-based indicators, animal welfare, farm size, fattening pigs, housing systems, Welfare Quality® assessment protocol

Introduction

Modern pig fattening facilities are designed to optimise management and increase efficiency, and are generally large production units in terms of the number of animals kept on a single farm (Turner et al 2003; Farm Animal Welfare Committee [FAWC] 2012). Recently, Kayser et al (2012) demonstrated that German consumers associate the term ‘intensive farming’ with a farm size of more than 1,000 pigs per farm. In Germany, the average farm size is 1,037 fattening pigs per farm, whereas 74% of all pigs are kept in farms with more than 1,000 and even 18% with more than 5,000 animals per farm (Statistisches Bundesamt 2014). The proportion of farms in the latter category, in particular, is continually growing (FAWC 2012). These production conditions are subject to increasing criticism from society and from politicians since they are believed to impair the welfare of the animals (Kayser et al 2012; Velarde et al 2015). Public discussions are hindered by the fact that no definition of intensive or industrial farming exists. Previous studies have mainly focused on the effects of farm sizes on health parameters and reported contradictory results. On the one hand, the risk of pathogens being imported through purchased animals and then transmitted by a high number of potentially susceptible animals is higher in larger units. On the other, large farms commonly implement improved hygiene measures (Gardner et al 2002). Carstensen and Christensen (1998) reported a higher incidence of salmonellosis with increasing farm size but Van der Wolf (2001) found the opposite. In contrast, farm size did not affect salmonellosis in the studies of Zheng et al (2007) and Baptista et al (2010). Farm size was also shown not to affect respiratory diseases, such as enzootic pneumonia and influenza in studies by Maes et al (2008) and Grøntvedt et al (2013). Studies investigating the effect of farm size on animal welfare are rare and have only focused on a very limited number of welfare indicators (Winckler & Leeb 2010). Knage-Rasmussen et al (2013), for example, did not find any relationship between farm size (120 to 7,825 pigs per farm) and behaviour or health parameters. Also, the occurrence of tail-biting, one of the major welfare problem in pig fattening, did not differ between farm sizes (500 to 7,500 pigs per farm) in the study of Moinard et al (2003). Comparisons between studies are difficult due to variations in study designs, country-specific production and environmental conditions, and varying welfare indicators.