The Welfare and Productivity of Dry Sows in Different Group Housing Systems in New Zealand

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Abstract

This research aimed to take a holistic approach to assessing dry sow welfare in relation to gestation accommodation. Multiple factors that affect the welfare of a sow were considered. In addition, the multitude of systems in New Zealand that are used to accommodate dry sows in groups were captured. Commercial pig farms (n=20 farms, 7,912 sows total) were chosen to represent the spectrum of different layouts and management practices in order to obtain data from a wide range of different systems. During each on-farm visit, data concerning housing, management, sow behaviour, welfare and productivity were collected. A number of criteria were used to describe the farms (group size, stall duration, presence of bedding, feeding method, feeding frequency). Sows kept in stalls for more than 5 weeks (n = 3 farms) had significantly higher injury scores than sows that were in stalls for a shorter length of time or sows that were not kept in stalls for any period during mating or pregnancy. Sows fed twice daily had significantly higher stereotypies ($P<0.05$) than those fed at a different frequency. A welfare index (WI) was calculated for each farm. This index incorporated each farm’s total scores for injuries, stereotypies, coat condition, soiling and lameness. A low WI represented a lower presence of indicators that were associated with compromises to welfare. Hence, a low WI represented good welfare. For each farm, the minimum possible WI was 0.33, whilst the maximum possible WI was 5.0. The mean WI was 0.65 ($±0.14$ SD). Overall, there was not a high prevalence of indicators of compromised welfare. Out of the 20 farms, with an average herd size of 395.60 sows per farm; only 10 sows in total were lame. Only three farms had sows with a coat condition score above 0 (normal). There was no difference between mean piglets born alive per litter (BA) for stalls (12.65$±$0.36) vs. group housed sows for the entire gestation (12.27 $±$ 0.43), or for the number of piglets weaned per sow per year (stalls: 23.70$±$0.59 W/S/Y, groups: 24.92$±$1.23 W/S/Y). As a result of this study, it is clear that there is no perfect or ideal system for keeping dry sows, because a sow’s needs change throughout different stages of the production cycle. Therefore the implication is that in any housing system, both the advantages and disadvantages relating to a sow’s welfare will also change over time. In light of this, operators need to understand the variation both between and within systems and how best to manage them.
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