

Changing Pen Configuration From Small to Large Pens: How Does this Change Resource Use for the Growing Pig?

A.S. Leaflet R2633

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Summary and Implications

Currently, several large production systems in the U.S. are utilizing large pen configurations of ≥ 200 pigs. Producers who are using this large pen concept often double stock their young pigs from arrival for several weeks and then gates are opened up to create one large pen. Therefore, pigs from smaller pens intermingle with unknown co specific and also have the possibility of utilizing new feeder and drinker resources. The objective of this study was to determine resource use when smaller pens were reconfigured to a larger pen design for the growing pig. The experiment was conducted in April, 2009. One wean to finish site within a large Midwestern commercial production system was used. All pigs were double-stocked and kept in smaller pen configurations for ~8 wks and then the back gates of eight consecutive pens. A total of 192 pigs in double-stocked pens (96 barrows and 96 gilts) received a unique colored ear tag in their left ear ($n = 4$ barrows and 4 gilts per small pen that would be opened to a large pen). Immediately upon opening up the swing gates, live observations occurred using an instantaneous 10 min scan sample for 2-hour duration (0800 to 1000-h). The number of pigs at their home feeder or home drinker was recorded along with pigs that were using a new feeder and new drinker respectively. Behavior will be presented descriptively. Within 2-h of opening up the swing gates pigs were visiting "foreign" feeder and drinkers. In conclusion, upon opening gates and creating larger pen configurations, pigs do not prefer their "home" feeder and or drinker over new resources within the pen.

Introduction

In the U.S. the majority of grow-finish pigs are weaned into pens that hold between 25 to 30 pigs and it is usual for

these pigs not to leave these pens until they reach market weight. Currently, several large production systems in the U.S. are utilizing large pen configurations of ≥ 200 pigs. Potential benefits of the large pen configuration include (1) providing the pig the opportunity to choose a micro-environment (2) the ability to avoid aggressive interactions in their home pen and (3) reduction in aggression during the marketing procedure. Producers who are using this large pen concept often double stock their young pigs from arrival for several weeks and then gates are opened up to create one large pen. Therefore, pigs from smaller pens intermingle with unknown co specific and also have the possibility of utilizing new feeder and drinker resources. Therefore, the objective of this study was to determine resource use when smaller pens were reconfigured to a larger pen design for the growing pig.

Materials and Methods

The protocol for this experiment was approved by the Iowa State University Institutional Animal Care and Use Committee (4-09-6716-S). The experiment was conducted in April, 2009.

Animals, housing and feeding: One wean to finish site within a large Midwestern commercial production system was used. The site was divided into two naturally tunnel ventilated buildings that each had two rooms. Each room had fully slatted (2.5 cm wide \times 1.3 m long) concrete floors, an 81 cm-wide center aisle, and pens (3.2 m wide \times 7.1 m long) that provided 0.69 m²/pig of pen floor space. Pens were divided by steel gates (91 cm height), and the back gates of each pen had the ability to swing freely or to be locked in a closed position. Pigs were fed a standard grow-finish diet that met or exceeded the nutritional requirements for this phase/weight (NRC, 1998). Feed was delivered on demand to a dry four hole feeder (91 cm high \times 53 cm wide \times 1.4 m long, with a 15 cm-deep pan; Nol Thorp Equipment, Inc. Stainless Steel N14160 County Rd M, Thorp, WI 54771-7715). Two nipple cup bowl drinkers were located in each pen. The drinkers were 20 cm long and 30 cm high. Pigs were observed daily at 0800 h to ensure pig health and facility maintenance.

Behavior: The day before behavioral observations, pigs were double stocked in 24 small pens over four rooms. A total of 192 pigs (4 barrows and 4 gilts; 10% per small pen) received a unique colored ear tag in their left ear and the feeder and drinkers in that respective small pen were marked with the same color as the ear tag (Figure 1). On the day of behavioral observations, one caretaker entered into eight consecutive small pens and opened up the back swing

gate to achieve one large pen configuration (n = 6). Immediately upon the gates opening, live observations occurred using an instantaneous 10 min scan sample for 2 h duration (0800 to 1000 h). The number of pigs at their home feeder or home drinker was recorded as “same”. Pigs that had a colored ear tag and were visiting a different colored or uncolored feeder or drinker were classified as “different”. All other pigs in the home pen were classified as “other pig behavior.” This information will be presented descriptively.

Results and Discussion

Within the first 2-h, pigs did not prefer to visit their “home” feeder (Figure 2) and/or drinker (Figure 3).

Figure 2. Feeder activity for growing pigs when small pens were opened up into one large pen.

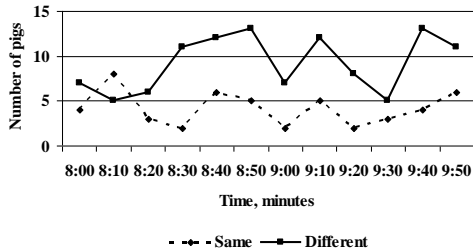
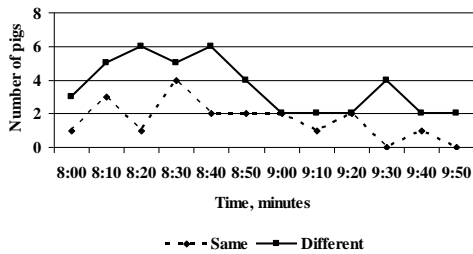
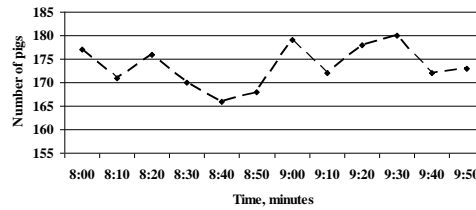


Figure 3. Drinker activity for growing pigs when small pens were opened up into one large pen.



The majority of pigs at each scan sample were engaged in other behavioral activities within their home pen (Figure 4).

Figure 4. Other pig behavior within the pen when small pens were opened up to make one large pen.



Therefore in conclusion, opening up small pens to form one large pen configuration does not have an adverse effect on resource usage. Pigs moved within their own pens and different pens to use the unfamiliar feeders and drinkers. The majority of pigs were engaging in other behavioral activities within the newly created large pen configuration.

Acknowledgements

This work was supported by Iowa Pork Producer Association and Elanco Animal Health. The authors thank Allison Meiszberg and Larry Sadler for assistance with data collection.

Figure 1. Schematic diagram from small to large pen configuration. Pigs were ear tagged the same color as their feeders and drinker (same). Empty pens did not receive a color. Swing gates were opened () at 0800 h.

