

Behaviour of Pigs in Large Group Auto-Sort



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Large group auto-sort (LGAS) systems require considerably more effort on the pigs' part to access feed than in small pens. We studied the pigs' behaviour in two LGAS systems to determine what adaptations they made. Pigs were able to maintain their typical diurnal eating pattern, with peaks at 'lights-on and lights-off' as seen in small pens. However, the pigs modified their eating by having fewer (5 vs 10-15) but longer meals than in small pens. Pigs made use of all of the available feeder spaces within the food court, visiting several each day. Although able to adapt their eating behaviour to the large group system, some had difficulty learning to enter and leave the food court several times a day. Management should ensure an adequate number of feeder spaces, sufficient room to move in the food court, and training methods to facilitate use of the auto-sort scale.

INTRODUCTION

The use of large groups for grow/finish pigs makes it economically feasible to introduce new technology, such as auto-sort scales, into pig production. One of the initial fears concerning large groups of pigs was that they would fight longer after being put together. Our earlier research refuted these concerns as aggression per pig at group formation was similar in small and large groups, and in fact, pigs from large groups proved easier to combine with other pigs when marketed. However, early attempts to use auto-sort technology encountered problems with variable feed intake among the pigs. We

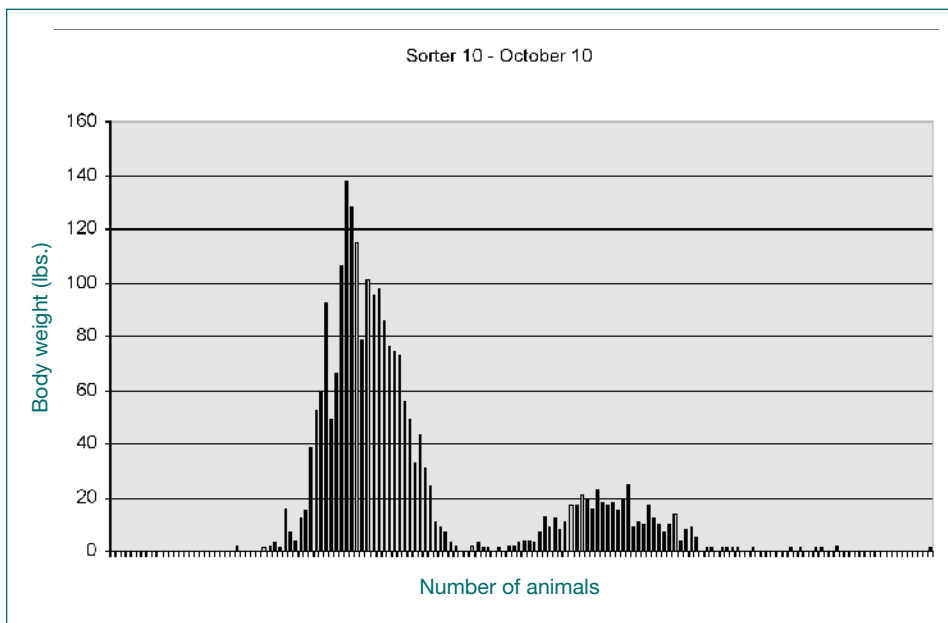


Figure 1. Distribution of weights recorded by sorter during period when pigs averaged approximately 45 kg (98 lbs). Second cluster to right represents times when two pigs were in the scale. Weights in lbs.

Pigs in large groups adapt their feeding behaviour by having 5 longer meals per day rather than 10 to 15 meals per day in small pens, but performance is similar in both groups.

continued our studies with a focus on eating behaviour.

EXPERIMENTAL PROCEDURES

Studies were carried out at two locations; the PSC Elstow Research Farm and a commercial grow/finish operation. The Elstow facility housed approximately 250 pigs in its LGAS (with 1 feeder space per nine pigs). The commercial farm maintained groups of 650 pigs with 60 feeder spaces. At the Elstow facility we studied the diurnal pattern of scale use, the use of individual

feeder spaces within the food court, and the eating patterns of individual pigs. Movement through the scale ('hits') were studied using automated output from the auto-sort scale. We photographed all of the feeder spaces at 5 min intervals using a time lapse camera. To identify individual pigs, 10 pigs in each study group were paint-marked. At the commercial farm, we again used output from the auto-sort scale, and supplemented this with live observations of four rooms of pigs for a 24-hr period.

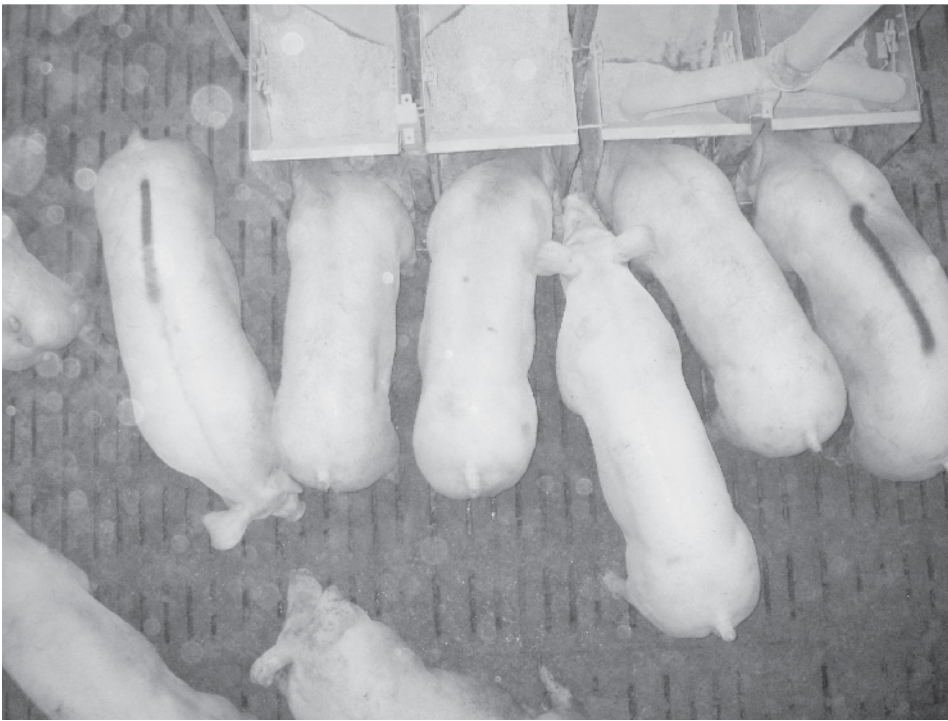


Figure 2: Example of photo used to assess eating patterns and feeder use.

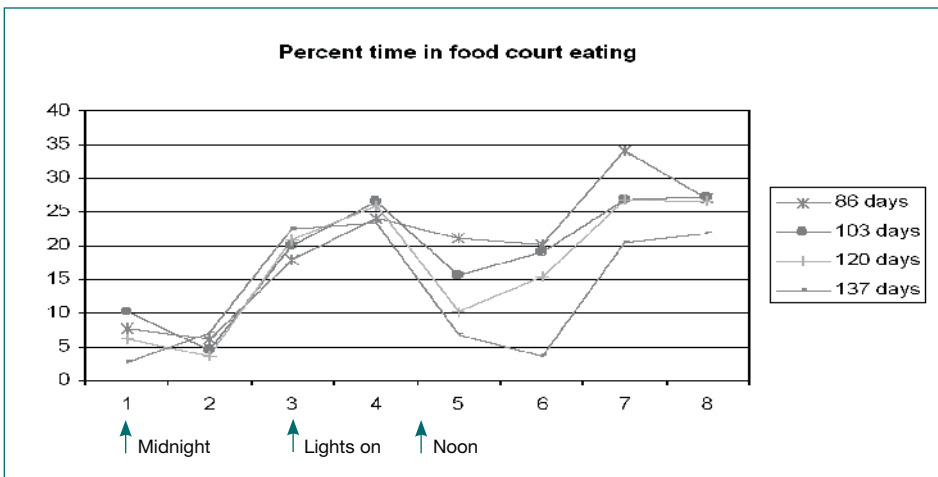


Figure 3: Diurnal pattern of eating by pigs within the food court in auto-sort rooms with different aged pigs. The day was divided into eight 3-hr periods, starting at midnight.

RESULTS AND DISCUSSION

Pigs normally have a diurnal eating pattern with most of the feeding taking place during the 'day'. When we first examined the pattern of 'hits' through the auto-sort scale the entry pattern was poorly defined. However, we determined that during the daytime, and when pigs were less than 75 kg, two pigs would often enter the scale at the same time (Figure 1). After adjusting the data for the number of pigs that entered the food court each hour, a more distinct diurnal pattern was found.

The analysis of photos of the feeder spaces (Figure 2) showed a clear diurnal pattern with an 8-fold increase in eating during the daytime peaks compared to the midnight low. The pattern showed typical peaks at 'lights-on' and 'lights-off'. The pigs used each of the feeder spaces fairly uniformly, something we had observed in previous studies. Pigs in small groups typically have 10 – 15 well defined 'meals' in a day. Pigs in the LGAS had approximately 5 meals per day, but they were longer in duration than in small group pens. This adaptation was successful as the pigs in LGAS

performed as well as those in small groups.

The study at the commercial farm allowed us to examine the change in eating behaviour as pigs aged. Our study rooms varied in age by six weeks. We determined that the average number of entrances into the food court each day decreased as the size (age) of the pigs increased, from nearly 4 entries per day at 40 kg to approximately 2.5 per day at 90 kg. The pattern of eating showed the typical diurnal, two-peaked, pattern described earlier (Figure 3). Of interest in this pattern was that younger pigs had less of a 'drop-off' in the middle of the day. Comparing these results with other studies suggests that the younger pigs were limited in the number of feeder spaces, and had to shift eating from the normal peak periods to the less intensive mid-day period.

The Bottom Line

Large group auto-sort systems pose some significant challenges to pigs in terms of eating behaviour. The feeders are all located in a food court which can only be accessed through a single sorter scale. The cost of moving to the feeders is greater than in a small pen, where pigs may only have to move a metre or so to find feed. Despite these restrictions, pigs pass through the sorter and eat in a typical diurnal pattern similar to that seen in small pens. However, pigs in large group auto-sort pens only enter the food court 2-4 times each day, and have fewer meals (5 vs 10-15) than in small pens. They compensate by eating longer during each meal. They also move freely about the food court, eating from several feeder spaces every day. Young pigs, who require more time to eat, may display a higher mid-day rate of eating indicative of restricted feeder space. We believe a key to making food courts work is to make sure the pigs know that food is present by introducing them to the food court rather than the loafing area. The food court should be spacious so that pigs have access to all of the feeders, and a feeder space should be provided for every 10-12 pigs.

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