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A Comparison of Alternative Winter Farrowing Systems

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Summary and Implications

The purpose of this demonstration was to compare two alternative winter farrowing systems that meet niche pork production criteria. The demonstration was conducted at the ISU Armstrong Research Farm, Lewis, IA, and the ISU Allee Demonstration Farm, Newell, IA. A group of 18 second parity gestating sows from the Allee Farm were randomly divided into two groups of nine sows. One group was farrowed during January 2007 at each farm. Each group farrowing was completed in 5 to 6 days. One farm had swing-side farrowing pens and the other farm had farrowing huts, all in bedded, heated rooms.

The two systems had virtually identical performance results. For both systems the average number of pigs born alive was 13 pigs per litter with an average birth weight of 3.8 lb per pig. Weaning occurred at 44.9 days of age with 10.2 pigs per litter weighing an average of 34.2 lb each. The pre-wean mortality was 21.8%. Although this is high, it is approximately 1/4 less than the pre-wean mortality recorded during our earlier demonstration of the bedded Swedish free-stall farrowing system. The larger number of pigs born live and the lower pre-wean mortality resulted in 10.2 pigs weaned per litter in this demonstration compared with 8.1 pigs per litter in the Swedish cubicle system. This is about a 26% improvement. Again, the bedded group lactation worked well with few mortalities and good pig growth. Overall about 80% of the piglet mortalities occurred on day 1. The swing-side pens had fewer losses on day 1, but more losses later.

Introduction

Niche pork markets have expanded rapidly. Many of the niche pork markets are seasonally short of pigs born in the winter months. The purpose of this demonstration was to compare two alternative winter farrowing systems that meet niche pork production criteria.

Materials and Methods

The demonstration was conducted at the ISU Armstrong Research Farm, Lewis, IA, and the ISU Allee Demonstration Farm, Newell, IA during January 2007. A group of 18 second parity gestating sows from the Allee Farm was randomly divided into groups. There were nine sows in each group. One group was farrowed during January 2007 at each farm. Each group farrowing was completed in 5 to 6 days.

The Armstrong Farm used a system with swing-side farrowing pens that were attached to 5 × 7 ft decks (pens). The decks were on 3 in. legs. The pens and decks were placed in a retrofitted older-style farrowing house with a flat concrete floor. There was a central alley and common feeding area. At farrowing, the sows were placed in the pens and the sides were locked parallel to form a farrowing crate for the first 72 hours. The farrowing room was insulated and had a forced air LP gas heater. The thermostat was set on 62°F and was reduced .5°F per day when farrowing was complete until reaching 59°F. Heat lamps were positioned over the creep areas of the pens. Straw bedding was provided at all times. Sows and pigs were kept in the pens for 7 to 10 days. Then each day, one sow and litter were allowed to leave their pen and have free access to the common alley. They were also allowed free access to the open pens. Once all sows and litters had free access, the pens and decks were removed. Sows had access to feed and water at central location when they were not in the pens. When in the pens sows had water and feed in the pen.

The Allee Farm used a system with modified A-frame farrowing huts placed in a pole barn (huts). The barn was heated to 38 to 40°F with a radiant tube gas heater hung from the ceiling. The huts were arranged back-to-back with a covered creep area between the rows of huts. The backs of the huts were open to allow the pigs into the creep area. Heat lamps were positioned over the covered creep area. Pigs were kept in their respective huts by 2 × 6 in. boards until 7 days of age. After 7 days of age, the pigs were allowed to move about freely. Bedding was provided at all times. Sows had access to feed and water at central location at all times.

Group lactation occurred. Weaning occurred at 41 to 49 days of age. Weaning was implemented by removing the sows and leaving the pigs in the bedded room. After the pigs were removed, the building was cleaned and the bedding pack was composted.

Results and Discussion

Results of the demonstration are shown in Table 1. The two systems had virtually identical performance results. For both systems the average number of pigs born alive was 13 pigs per litter with an average birth weight of 3.8 lb per pig. Weaning occurred at 44.9 days of age with 10.2 pigs per litter weighing an average of 34.2 lb each. The pre-wean mortality was 21.8%. Although this is high, it is approximately 1/4 less than the pre-wean mortality recorded during our earlier demonstration of the bedded Swedish free-stall farrowing system. The larger number of pigs born live and the lower pre-wean mortality resulted in 10.2 pigs weaned per litter in this demonstration compared with 8.1 pigs per litter in the Swedish cubicle system. This is about a

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26% improvement. Again the bedded group lactation worked well with few mortalities and good growth.

The time of the pre-wean mortalities was summarized according to which day after farrowing that the mortality

occurred (Table 2). Overall about 80% of the piglet mortalities occurred on day 1. The swing-side pens had fewer losses on day 1, but more losses later. The comparison will continue in the coming years.

Table 1. Farrowing results of two alternative winter farrowing systems in Iowa.

	Pens	Huts	Average
No. of litters	9	9	9
Month farrowed	Jan	Jan	
No. pigs born alive/litter	12.8	13.2	13.0
Avg. birth wt. (lb)	3.9	3.7	3.8
No. pigs weaned/litter	10.1	10.2	10.15
Avg. weaning wt. (lb)	35.3	33.0	34.15
Avg. weaning age (days)	45.2	44.6	44.9
Pre-wean mortality, %	20.9	22.7	21.8
Farrowing interval (days)	6	8	7

Table 2. Summary of piglet mortalities by days after farrowing when mortality occurred.

	Pens	Huts	Overall average
Through day 1, pigs (%)	17 (71)	24 (88)	20.5 (80.5)
After day 1, pigs (%)	<u>7 (29)</u>	<u>3 (12)</u>	<u>5.0 (20.5)</u>
Total, pigs (%)	24 (100)	27 (100)	25.5 (100)