

First Year Results of a Swedish Deep-bedded Feeder Pig Production System in Iowa

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Summary and Implications

The results of 1 year of operation and four farrowing groups are summarized. Breeding and gestation occurred in a hoop building with corn stalk bedding. Conception rates and litter size was excellent. Farrowing occurred in a remodeled building. Pre-wean pig mortality was high (18–24%). At 2 weeks of age the cubicles were removed and group lactation occurred. Group lactation worked well. Sows selected their bedded farrowing cubicles. At weaning (30 days) sows were removed and the pigs remained in the farrowing/lactation room for 30 days. Pig growth in the deep-bedded nursery was excellent with 60–lb pigs at 60 days of age and 1.25 lb/day average daily gain during the nursery phase.

Introduction

At the Iowa State University (ISU) Armstrong Farm in southwest Iowa, a Swedish feeder pig production system has been demonstrated for about 1 year. The Swedish system relies on bedding, simple buildings, intensive management, and keen husbandry for success.

Methods

Breeding and gestation phases were housed in a hoop structure with individual feeding stalls. Cornstalks were used for bedding. Hand mating and artificial insemination were used. Large, round bales of cornstalks were used for the deep bedded areas where the sows live in groups. A 1950s-style hog house had been remodeled for farrowing, group lactation, and nursery. Farrowing cubicles with rollers and oat straw bedding were used. The hog house has been remodeled with “breathable” ceiling and exhaust fans. Two groups of 14 Yorkshire x Landrace sows bred to Hampshire boars produced feeder pigs in the system.

Detailed description of this system can be found in “Demonstrating a Swedish Feeder Pig Production System in Iowa” (4). An overview of the system in Sweden is given by Honeyman (3) and Halverson and Honeyman (2).

Results and Discussion

Overall, the Swedish feeder pig production system worked well. Conception rate was excellent (>95%). The hoop structure with cornstalk bedding and individual lockable feeding stalls provided an excellent environment for the sows. Approximately 27 sq ft of bedded area was

allowed for each sow. The combination of deep-bedded group housing with individual feeding stalls provides the advantages of group housed sows as well as the advantages of individually crated. At the daily feeding the group-housed sows were easily managed as individuals for various individual activities (A.I., pregnancy checking, vaccination, etc.). Also, the sows did not fight for feed.

Performance of the sows in farrowing/lactation remodeled building is shown in Table 1. The average number of pigs born alive per litter was excellent (9.6 to 12.4 pigs). Average birth weight also was excellent (3.5 to 4.4 lb/pig). The farrowing interval (5–13 days) was acceptable. A short (<7 days) farrowing interval is critical for group lactation to succeed. Large litters of heavy pigs born in a short time reflect an excellent breeding and gestation environment in the hoop structure. These results are consistent with work by Connor et al. (1).

The weakest part of the overall system was farrowing, particularly pre-wean mortality. Pre-wean survival was 75.8 to 81.6%. The sows were better mothers during the second parity (A2 and B2). Pre-wean mortality was 18.4 to 24.2%, about double industry standards. Most of the piglet deaths occurred in the first few days after birth.

Weaning occurred at approximately 4.5 weeks of age (29.3 to 35 days). The average number of pigs weaned per litter were approximately 8.5 pigs/litter (7.5 to 10.1 pigs/litter). Weaning weight averaged from 17 to 28 lb/pig with heavier weights on the second parity and longer lactation (Table 1).

After weaning the sows were removed and the pigs stayed in the deep-bedded lactation room that became a nursery. Nursery phase pig performance is shown in Table 2. The pigs remained in the nursery for about 30 days after weaning. At approximately 60 days of age the pigs were removed from the nursery and sold. The average selling weight was 51 to 61 lb. Average daily gain (ADG) during the nursery phase was 1.16 lb/day to 1.35 lb/day. No feed antibiotics were used in the nursery phase. Pig health was excellent. Death loss in the nursery phase was less than .5%, i.e., two pigs died out of 435 total pigs.

The Swedish system will continue to be demonstrated and refined. Special attention will be given to reducing pre-wean mortality.

Acknowledgments

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References

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Table 1. Farrowing phase results (deep-bedded) of a Swedish system.

	Group			
	A-1	B-1	A-2	B-2
No. of litters	14	14	11	13
Farrowing rate, (%)	100	93	100	100
No. pigs born alive	149	134	136	130
No. pigs born alive/litter (ave.)	10.6	9.6	12.4	10.0
Ave. birth weight (lb)	3.5	3.8	3.8	4.4
No. pigs weaned	113	105	111	106
No. pigs weaned/litter (ave.)	8.1	7.5	10.1	8.2
Ave. weaning weight (lb)	17.4	18.4	26.0	28.0
Ave. age at weaning (days)	31.8	29.3	35.0	32.0
No. pigs weaned/born alive (%)	75.8	78.4	81.6	81.5
Farrowing interval (days)	13	7	5	7
Parity	1	1	2	2

Table 2. Nursery phase performance (deep-bedded) of a Swedish system.

	Group			
	A-1	B-1	A-2	B-2
No. pigs weaned	113	105	111	106
Ave. wean wt. (lb)	17.4	18.4	26.0	28.0
Ave. wean age (days)	32	29	35	32
Nursery duration (days)	29	30	26	29
Ave. selling age (days)	61	59	61	61
Ave. selling wt. (lb)	51.0	56.0	60.5	65.0
Ave. nursery ADG (lb/day)	1.16	1.25	1.35	1.27