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# A comparison of group-housed gestation and stalled gestation within a system

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This study attempts to measure various productivity parameters, feed usage, labor requirements and construction cost differences on two farrow to wean sow farms within the Schwartz Farms system. Farm A is a 5000 sow farm utilizing large pen, electronic sow feeding (ESF) with post-implant placement of sows into the pens. Farm B is a 5000 sow farm utilizing gestation stalls.

Reproductive performance, sow removal by parity and sow removal reason and production labor hours are evaluated from Q2 of 2010 through Q1 of 2011. The comparison is limited to four quarters due to changes in PRRS status in the farms before and after this time period. Feed usage is evaluated over the previous 39 months. The comparison of construction costs of the two systems is based on cost estimates for the additional space required for the group-housing system.

Replacement breeding stock for Farm A and Farm B are sourced from the same multiplier, while differences in feed formulation and source, semen source, gilt vaccination protocols and gilt age at first service did exist during the time period of this comparison. A difference in lactation length between the farms should be noted, with Farm A having an average lactation length of 20.3 days and Farm B an average lactation length of 21.1 days during the time period.

The reproductive performance parameters of farrowing rate, total born per litter, live born per litter, sow mortality and pigs weaned per mated female per year are shown in Table 1. This non-statistical comparison shows small differences in all parameters.

Sow removal by parity is shown in Table 2. During this time period, Farm A (ESF) removed more parity 1, 2, 3 and 4 sows than did Farm B.

Sow removal by reason is shown in Table 3. It is interesting to note several major differences between the farms. Farm A (ESF) removed 653 sows labeled “Did Not Conceive”

as compared to 205 for Farm B, while Farm B removed 297 labeled “No Heat” compared to 76 for Farm A. Also notable is 194 labeled “Difficult Farrowing” for Farm B compared to 36 from Farm A. Farm A and Farm B removed 220 and 200 sows, respectively labeled “Lame.”

From January 2008 to March of 2011, Farm A gestation feed intake was 4.92 pounds per sow per day and Farm B was 5.14 pounds per sow per day. Lactation feed intake for Farm A was 14.7 pounds per sow per day while Farm B was 15.9 pounds per sow per day. The average cull weight for Farm A was 473 pounds per sow while Farm B was 498 pounds per sow, reflecting both the average parity at culling and feed intake differences.

A comparison of labor (production, sanitation, maintenance and on-site management) hours incurred for 2010 indicates 8.29 hours per sow for Farm A and 7.82 hours per sow for Farm B. Differences in farm design, and Farm A operating under filtration, should be noted.

Additional gestation housing space is required for ESF compared to conventional stalled gestation. Additional pit floor, slats, pillars and beams, pit side walls, building side walls, ceiling roof truss and attic insulation can be readily estimated. A building constructed to house 2000 sows in large pen gestation in a 5000 sow unit requires approximately 4000 additional square feet. Standard depreciation and interest charges equate to approximately ten to fifteen cents per weaned pig additional cost of production because of the additional space requirements of the ESF system.

A limitation in our attempt to analyze large pen gestation housing relative to conventional housing has been the change in health status (i.e. PRRS) of the farms over time. Data will continue to be gathered across the system; with PRRS control techniques, including additional filtration, we anticipate an acceleration in the accessibility of information.

**Table 1:** Comparison of reproductive performance Q2-2010 through Q1-2011

<b>Q2-2010</b>	<b>Farm A (ESF)</b>	<b>Farm B (Conventional)</b>
Farrow rate	86.1%	89.7%
Total born	13.9	14.0
Born live	12.3	12.7
Sow mortality	5.4%	6.2%
P/MF/Y*	24.8	26.2
<b>Q3-2010</b>		
Farrow rate	87.6%	89.3%
Total born	13.8	13.7
Born live	12.2	12.3
Sow mortality	9.2%	6.9%
P/MF/Y*	26.8	26.8
<b>Q4-2010</b>		
Farrow rate	83.5%	89.4%
Total born	13.5	13.9
Born live	12.1	12.5
Sow mortality	6.4%	4.6%
P/MF/Y*	24.6	26.6
<b>Q1-2011</b>		
Farrow rate	87.5%	90.8%
Total born	13.7	13.8
Born live	12.2	12.7
Sow mortality	6.6%	5.3%
P/MF/Y*	25.7	26.6
<b>Average</b>		
Farrow rate	86.2%	89.9%
Total born	13.7	13.8
Born live	12.2	12.6
Sow mortality	7.0%	5.8%
P/MF/Y*	25.0	25.7

\* NPPC standard used

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**Table 2:** Sow removal by parity, Q2-2010 through Q1-2011

Parity	Farm A (ESF)	Farm B (Conventional)
0	259*	244
1	381	288
2	270	186
3	286	202
4	400	280
5	369	388
6	295	391
7	243	360
8+	152	469

\* Includes 49 gilts removed on arrival

**Table 3:** Sow removal by reason, Q2-2010 through Q1-2011, major categories

Removal reason	Farm A (ESF)	Farm B (Conventional)
Did not conceive	653	205
Difficult farrowing	36	194
Lame	220	200
Not heat	76	297
Poor condition	216	75

