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Reducing cost of production: Uncovering the potential within your farm

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Maintaining a cost of production that promotes profitability continues to be the driving force in the production of commodity pork. In this paper I will identify several key indicators of maintaining a low cost of production, concentrating on the farrowing component of the production system. Although the majority of costs of producing a pig occur in the finishing stages of production, the ability to produce a piglet that enters the finishing stage with the greatest potential to have the least cost of production must be the goal of every production system. This paper will concentrate on several key production practices in evaluating methods to reduce the cost of producing a pound of pork.

During the 1990s, production systems switched to three-site production and lowered the age of weaning in an attempt to reduce the spread of certain diseases (1). Recent data suggest that increasing wean age can dramatically reduce the cost of production through the finishing stages of production (2). Although the data overwhelmingly supports increasing the age of weaning, some farms struggle with finding additional farrowing spaces or are restricted by permit requirements from adding additional farrowing spaces. Two viable options are reducing the number of sows on the farm and increasing farrowing crate utilization.

Reduce sow numbers

The data in **Tables 1** and **2** are from a 2400 sow farrowing facility; these data support the theory of reducing sow numbers to increase barn performance. Since 2001 the farm has reduced inventory by 200 animals. Weaning age has increased by 1.4 days and the farm is essentially weaning the same number of pigs weekly as it did when sow numbers were increased. Weaning age has increased from 16.4 days to 17.8 days, and weaning weight has increased from 10.9 lb per piglet in 2001 to 12.04 lb per piglet in 2004.

Increase farrowing crate utilization

Farrowing crate utilization is an underused parameter of farrowing house performance. Weaning should be the result of a need for farrowing crate space and not driven by a need for wean sows. Too often barn employees wean early to provide the breeding department with wean sows for breeding the following week. To perform at optimal levels, barns must maintain an 85-90% farrowing crate utilization ratio. Although some barns can perform while maintaining a farrowing crate utilization ratio higher than 90%, this ratio requires excellent management skills to consistently provide acceptable results. A target of 85-90% crate utilization is easily attainable and should be considered a reasonable goal for most commercial farms. Weaning on multiple days of the week versus one or two days per week will greatly increase crate utilization.

In addition to increased piglet performance by maximizing wean age, the subsequent performance of the sow is greatly enhanced by extending the lactation period. **Figure 1** illustrates the total born and born alive based on the sow's previous lactation length in a large Midwest system. Previous lactation length ranged from 14 to 24 days. These data support a minimum weaning age of 17 days.

Average weaning age of a farm is important, but reducing the number of sows that fall under the minimum acceptable weaning age is also very important in increasing performance on a farm.

References

1. Harris, D.L. 2000 Multi-Site Pig Production
2. Main, R.G. et al. 2002 Effects of Weaning Age on Costs and Revenues in Three Site Production

(Tables and figure follow...)

Table 1: 2001 data from a 2400 sow farrowing facility.

| | Jan | Feb | Mar | Apr | May | May |
|--------------------------------|-------|-------|-------|-------|-------|-------|
| <i>Breeding performance</i> | | | | | | |
| Total number of services | 611 | 516 | 594 | 528 | 611 | 2860 |
| Percent repeat services | 10.1 | 10.5 | 9.3 | 8.9 | 9 | 9.5 |
| Percent multiple matings | 90.5 | 88 | 93.8 | 93 | 92.3 | 91.6 |
| Weaning - 1st service interval | 6.7 | 6.2 | 6 | 6.3 | 6.2 | 6.3 |
| Percent sows bred by 7 days | 89.1 | 90.2 | 92.6 | 88.3 | 90.2 | 90.1 |
| Entry - 1st service interval | 202.8 | 209.8 | 195.5 | 215.1 | 196.4 | 202.8 |
| <i>Farrowing performance</i> | | | | | | |
| Number of sows farrowed | 475 | 449 | 459 | 483 | 527 | 2393 |
| Ave parity of farrowed sows | 5.3 | 5.5 | 4.9 | 4.6 | 4.4 | 4.9 |
| Average total pigs per litter | 11.9 | 12.1 | 12.4 | 12.2 | 12.2 | 12.1 |
| Average pigs born alive/litter | 11 | 11 | 11.4 | 11.2 | 11.1 | 11.1 |
| Ave birth wt/liveborn pig | 3 | 3 | 3 | 3 | 3 | 3 |
| Percent stillborn pigs | 5.5 | 6.1 | 5.6 | 6.4 | 6.3 | 6 |
| Percent mummies | 2 | 2.6 | 2.7 | 1.8 | 2.3 | 2.3 |
| Farrowing rate | 79.6 | 79.9 | 80.4 | 84.7 | 85.4 | 82 |
| Adj. farrowing rate | 83 | 82.2 | 82.3 | 87.7 | 88.1 | 84.7 |
| Farrowing interval | 140 | 140 | 140 | 141 | 142 | 141 |
| Litters/mated female/year | 2.44 | 2.47 | 2.49 | 2.47 | 2.47 | 2.47 |
| Litters / crate / year | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>Weaning performance</i> | | | | | | |
| Number of litters weaned | 481 | 450 | 460 | 533 | 500 | 2424 |
| Total pigs weaned | 4609 | 4238 | 4450 | 5135 | 4893 | 23325 |
| Pigs weaned per sow | 9.6 | 9.5 | 9.7 | 9.8 | 9.8 | 9.7 |
| Pre-weaning mortality | 14 | 13.2 | 14.7 | 12.3 | 13.3 | 13.5 |
| Average piglet weaning weight | 11 | 11.1 | 11 | 10.9 | 10.8 | 10.9 |
| Average age at weaning | 16.3 | 16.7 | 16.6 | 16.2 | 16 | 16.4 |
| Adjusted 21 day litter weight | 130 | 128 | 130 | 131 | 131 | 130 |
| Pigs wnd/mated female/yr | 23.5 | 23.3 | 24.1 | 24.1 | 24.2 | 23.8 |
| Pigs weaned/crate/year | 0 | 0 | 0 | 0 | 0 | 0 |
| Pigs weaned/lifetime female | 19 | 23 | 24 | 22 | 27 | 23 |
| <i>Population</i> | | | | | | |
| Ending female inventory | 3379 | 3266 | 3146 | 3018 | 3109 | 3109 |

Table 2: 2004 data from a 2400 sow farrowing facility.

| | Jan | Feb | Mar | Apr | May | May |
|--------------------------------|-------|-------|-------|-------|-------|-------|
| <i>Breeding performance</i> | | | | | | |
| Total number of services | 551 | 481 | 549 | 505 | 556 | 2642 |
| Percent repeat services | 5.6 | 6 | 5.3 | 8.1 | 7.2 | 6.4 |
| Percent multiple matings | 78.4 | 80.5 | 87.8 | 83.8 | 86.5 | 83.5 |
| Weaning - 1st service interval | 6.3 | 5.8 | 5.9 | 6.2 | 6 | 6 |
| Percent sows bred by 7 days | 91 | 92.8 | 90.7 | 91.2 | 92.4 | 91.6 |
| Entry - 1st service interval | 146.1 | 153.1 | 145.7 | 158.7 | 182.7 | 155.3 |
| <i>Farrowing performance</i> | | | | | | |
| Number of sows farrowed | 454 | 401 | 508 | 493 | 461 | 2317 |
| Ave parity of farrowed sows | 3.6 | 3.3 | 2.9 | 2.6 | 2.6 | 3 |
| Average total pigs per litter | 12.2 | 11.9 | 12.5 | 12.6 | 12.7 | 12.4 |
| Average pigs born alive/litter | 11.1 | 10.8 | 11.5 | 11.7 | 11.6 | 11.4 |
| Ave birth wt/liveborn pig | 0 | 0 | 0 | 0 | 0 | 0 |
| Percent stillborn pigs | 7.1 | 7 | 6.3 | 5.9 | 7.2 | 6.7 |
| Percent mummies | 2.1 | 1.8 | 1.5 | 1.5 | 1.1 | 1.6 |
| Farrowing rate | 83.6 | 84.6 | 84.8 | 85.3 | 87 | 85.1 |
| Adj. farrowing rate | 87.1 | 87 | 87.6 | 88.8 | 91.3 | 88.4 |
| Farrowing interval | 144 | 140 | 141 | 142 | 142 | 142 |
| Litters/mated female/year | 2.48 | 2.51 | 2.49 | 2.51 | 2.54 | 2.51 |
| Litters/crate/year | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>Weaning performance</i> | | | | | | |
| Number of litters weaned | 412 | 430 | 494 | 509 | 460 | 2305 |
| Total pigs weaned | 3894 | 4208 | 5000 | 5382 | 4855 | 23339 |
| Pigs weaned per sow | 9.6 | 9.8 | 10.1 | 10.6 | 10.6 | 10.2 |
| Pre-weaning mortality | 9.7 | 8.5 | 8.5 | 8.2 | 10.7 | 9.1 |
| Average piglet weaning weight | . | . | . | . | . | . |
| Average age at weaning | 19.4 | 19.2 | 16.4 | 17.3 | 17.1 | 17.8 |
| Adjusted 21 day litter weight | . | . | . | . | . | . |
| Pigs wnd/mated female/yr | 23.8 | 24.6 | 25.3 | 26.6 | 26.8 | 25.5 |
| Pigs weaned/crate/year | 0 | 0 | 0 | 0 | 0 | 0 |
| Pigs weaned/lifetime female | 44 | 36 | 38 | 34 | 28 | 37 |
| <i>Population</i> | | | | | | |
| Ending female inventory | 3063 | 2902 | 2979 | 3124 | 2993 | 2993 |

Figure 1: Total born and live born based on the sow's previous lactation length in a large Midwest system.

