

Evaluating Decisions to Reduce Pork Supplies

There has been much written about the need to reduce pork supplies to come in line with the higher feed costs and weaker demand. Feed was cheap and demand growing when expansion plans were made. Several economists, lenders and others have suggested that cutting a half a million sows from production is necessary to return to profitability. That is easier said than done. How do you cut a half a million sows and are there other actions that will reduce pork supplies beyond the sow farm?

A more difficult question is how do you provide incentives to the individual to make changes that are beneficial to the rest of the industry? When producers are losing money the economic signal is to reduce cost or increase price. The individual does not have control over price, but he or she can impact their own cost. Cost control typically comes from spending less by delaying maintenance, buying cheaper inputs, taking more risks with health, nutrition, genetics, etc., or by improving efficiency, more output per unit of input. Often managers focus on more output, but that is not always the correct answer.

It is important to recognize that cost structure is different today than it was when the facility investment decision was made. Fixed cost is a smaller share of total cost today as feed costs have increased. Which is more important to reduce, fixed costs that represent 25% of total cost or feed cost that represents 65% of total cost? Increasing pigs or pounds out the door (maximizing output to reduce average fixed cost) is not as important as reducing feed cost each pig produced. Having fewer, but more efficient, pigs in the finisher will increase profits compared to having more pigs that are less efficient. Weaning age and pen density are just two management decisions that should be re-evaluated under the new cost of feed and hog prices.

Consider the case of increasing weaning age in existing facilities by reducing sow numbers. Conception rates and litter size improves with later weaning. There are also fewer culls as the light end of pigs weaned at 24 days is larger than the light end of 17 day weaning. Older pigs are larger, can start with a cheaper nursery diet and will gain faster and more efficiently throughout its life. Fewer pigs in the finisher can improve the rate and cost of gain as well. What about the economics?

While individual farm results will differ, a recent example prepared by Dave Stender, ISU Extension swine specialist, showed a net gain to older weaning. Fewer pigs out the door, due to fewer sows, increases the fixed cost per pig weaned. However, there is less death loss and fewer culls in the nursery and finisher, feed costs are lower and the animals more efficient. The net result is that total cost for the finished hog decreases, because the improved efficiency in the finisher overshadows the higher fixed cost in the sow farm.

Another important management concept is to focus on marginal cost and marginal benefit rather than the average cost or return. Here are two examples to consider.

First, is optimal slaughter weight. As hogs near slaughter weight, feed to gain increases at an increasing rate but the relative diet cost decreases for heavier hogs. Also, the price per pound increases as they grow through the discounted weight classes, but decreases as they become relatively fatter and enter weight classes that are discounted for being over weight. The optimal marketing weight is when the cost of last pound added equals the revenue it adds. Optimal weights will be lighter when feed is expensive and hogs are cheap compared to cheap feed and expensive hogs. Yet, producers often sell hogs at the same weight regardless, or even heavier weights trying to divide the sunk cost of the pig by more pounds. If you are losing money on each additional pound, more gain is not going to solve the problem. Here is a link to a decision tool to evaluate optimal marketing weights under different price conditions.

http://www.econ.iastate.edu/faculty/lawrence/Lawrence_website/porkdecisiontools.htm

A second example involves variation across multiple sites. Often producers focus on the average cost across the entire operation rather than focusing on the cost and return of each individual site. However, not all sites are equally productive and while closing one site will reduce production and income, the cost savings may more than offset the loss in income.

Consider three, 1000-head wean-finish buildings turned twice a year adding 250 pounds of gain (Table 1). The average cost of gain across the three is \$48/cwt and at a \$49 selling price, the operation is profitable making \$15,000 per year. However, closing site C which has higher costs would increase profit to \$25,000 per year on fewer hogs because its costs are higher than the revenue it generates. The principles apply to other decisions such as multiple crop fields or multiple sow farms. The key is to analyze each unit individually and eliminate the unprofitable site.

Table 1. Illustration of Average v. Marginal Cost and Return

Site	Cost of Gain \$/cwt	Cost/year	Revenue/year	Net/year
A	\$45	\$225,000	\$245,000	\$20,000
B	48	240,000	245,000	5,000
C	51	255,000	245,000	(10,000)
Average	48			
Total		720,000	735,000	15,000

In both examples, the most profitable decision for the individual also leads to reduced supplies as long as revenues are lower than costs. It is possible that prices can rise to a level that is profitable for the individual to produce the marginal unit, but prices are not high enough for all producers to remain in business. Those are more difficult decisions and misaligned incentives, but the first step is for individuals to understand and evaluate their own costs and returns.

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