

## Management and Nutrition Strategies to Control Feed Costs

Controlling feed costs has always been a priority for swine producers. However, rising costs of corn, soybean meal (SBM) and rock phosphates coupled with low hog markets are creating a unique set of challenges for producers. Read on for valuable tips to help control feed costs both from a management and nutrition perspective in the challenging markets of 2008.

### MANAGEMENT

- 1. Feed wastage.** With rapidly rising feed costs, minimizing feed wastage can result in dramatic savings. Reduce feed wastage by ensuring feeders are in good working order and properly adjusted. Pigs should have free access to feed at all times, however, nursery pig feeders should be adjusted so that 50-70% of the feeder pan is visible. For grow-finish pigs, 70-80% of the feeder pan should be visible. With an average grow-finish feed cost of \$200/ton, each 1% reduction in feed wastage will save \$0.60/pig. Thus, reducing feed wastage by 5% will save more than \$3/pig.
- 2. Particle size.** The particle size of corn fed to pigs should average 600-700 microns in meal feeds. University studies estimate a 100-micron decrease in particle size will improve feed efficiency 1.3%. Thus, reducing corn particle size from 1000 to 700 microns will improve feed efficiency by 4%, which will save more than \$2.40/pig in feed costs.
- 3. Pelleting.** Pelleting swine diets can improve feed efficiency 4-6% in all phases of production compared to meal feeds due to a decrease in feed wastage and an increase in diet digestibility. Pelleting typically increases diet cost \$3-10/ton but can still save anywhere from \$1-\$3/pig depending on ingredient costs.
- 4. Rodent control programs.** While rodent control can be challenging, it is vital for all swine production enterprises. Preventing rodent infestation will decrease the potential and spread of disease. In addition, rodents can eat a substantial amount of feed. A severe infestation can increase feed efficiency 1 to 3%, resulting in increased feed costs of more than \$1/pig.
- 5. Phase feeding.** Feeding multiple diets from 40 lb to market helps reduce feed costs while maximizing growth performance and feed efficiency. Feeding multiple phases allows pigs to be fed more closely to their nutrient requirement and prevents over feeding of expensive nutrients like protein, energy, and phosphorus. With current diet costs, using 5 vs. 4 diets during the finishing period reduces feed cost by \$1/pig, with an additional \$0.10/pig feed cost savings using 6 vs. 5 diets. Considerations for the number of phases fed include logistics of feed manufacturing and delivery as well as age and weight spread within a group on the same feed line. A tighter spread in age and weight within a group means more dietary phases can be fed to help reduce feed costs.
- 6. Split-sex feeding.** Split-sex feeding during grow-finish can save \$0.30-\$0.50/pig in feed costs because we are targeting diets and budgets to more closely match the nutrient needs of gilts and barrows. Gilts have lower intakes and grow slower but have better feed conversion and leaner carcasses than barrows. Thus, gilts benefit from more nutrient dense diets than barrows, especially in mid to late finishing. Split sex feeding is most beneficial when entire barns are filled with either barrows or gilts. Barrows often

reach market weight 7 days sooner than gilts which allows for barns to be refilled sooner, increasing pig flow. If split sex feeding by barn is not an option, mixed sex feeding may improve barn utilization since heavy barrows are removed from pens at first cut, resulting in increased square footage per remaining pig. When determining the feasibility of split sex feeding, consider feed cost per pig, pig flow, and space utilization.

- 7. Feed budgeting.** Follow feed budgets closely to avoid feeding more of any phase than budgeted. Over-feeding diets will not result in better performance and may actually reduce growth rate. Conversely, underfeeding the proper amount of feed budgeted by 10% will have the same adverse effect on growth performance as lowering dietary lysine levels (see item 2 below).

## **NUTRITION**

- 1. Phytase.** Akey has successfully used phytase in swine diets for more than 10 years. We depend more on phytase as phosphate prices increase and environmental pressures to decrease P excretion increase. The addition of moderate levels of phytase will reduce feed cost more than \$1.00/ton and save over \$0.30/pig with \$600/ton dicalcium phosphate. Higher levels of phytase can result in even further savings in some cases. Phytase in sow diets results in savings of more than \$1/ton, which will increase as phosphate prices trend higher.
- 2. Dietary lysine level.** When ingredient costs are high it is tempting to reduce feed costs by lowering dietary lysine levels. However, matching dietary lysine levels with requirements will ensure optimal feed efficiency. Reducing lysine levels below requirements for lean gain (i.e., removing 50 lb/ton of SBM which reduces dietary lysine level by 0.06%) will decrease diet cost \$2/ton but will result in slower growth (6-8%) and poorer F/G (5-10%). This will increase days to market (8-11 days) and feed per pig (30-60 lb) resulting in higher feed costs per pig (\$2-\$4). Reducing dietary lysine levels below the requirement will also result in fatter carcasses and reduced percent lean, decreasing packer premiums.
- 3. Synthetic amino acids (AA).** Crystalline lysine, methionine, and threonine are cost-effective given current ingredient prices. They are used to lower SBM inclusion and reduce diet cost. However, excessive use of L-lysine without supplementation of other AA will actually increase feed cost per pig due to AA imbalances that result in reduced performance. At today's ingredient prices, synthetic amino acids in grow-finish and sow lactation diets will save more than \$3/ton of complete feed. Akey formulations contain correct amounts of synthetic AA to keep diet costs as low as possible while maintaining pig and sow performance.
- 4. Dietary energy.** Removing fat from swine feeds lowers cost per ton. With fat at \$0.27/lb, adding moderate to high levels of fat in grow finish diets increases diet cost more than \$9/ton, including adjustments in SBM to maintain lysine/calorie ratios. Higher dietary energy levels decrease F/G, which results in lower feed cost per pound of gain when fat is priced competitively with corn. If corn is \$4.50/bu, fat should cost less than \$0.24/lb to be cost-effective based solely on feed conversion. Some producers also detect gain responses to added fat which must be factored into a cost benefit analysis. The Akey technical team can help with this analysis.
- 5. Alternative ingredients.** Explore availability of alternative ingredients, including wheat midds, barley, canola meal, peas, bakery by-products, wheat, distillers dried grains with solubles and liquid whey. Using alternative ingredients requires diets to be reformulated by Akey. We use nutrient information such as protein, calcium, phosphorus, fat and, depending on the ingredient, salt or sodium content to accurately prepare diets with alternative ingredients. Be aware that some alternative ingredients are variable in nutrient content or may pose a mycotoxin risk which can result in inconsistent or poor performance.

- 6. Feed additives.** Make sure feed additives are cost-justified. If an additive has a claim for improving F/G by a certain percent, multiply that percentage by the average cost of the grow-finish diet. This value represents the maximum amount that can be paid for the additive per ton of complete feed. For example, if finisher feed averages \$200/ton and an additive improves F/G by 3% (2.95 to 2.86), that additive should cost less than \$6/ton to break even. Popular additives include low levels of antibiotics which can improve ADG and F/G by 16 and 7%, respectively in nursery pigs, and 11% and 5%, respectively in finisher pigs. The return on investment will vary depending on the price of the antibiotic but can be worth up to \$3/pig. Always consult your veterinarian for advice on control and treatment of disease challenges.
- 7. Ingredient nutrient levels.** Take full advantage of the nutrient content of major ingredients such as SBM and corn. A 1% increase in crude protein content of SBM reduces inclusion 8 lb/ton of complete feed. With SBM at \$350/ton and corn at \$4.50/bu, this small change reduces complete feed cost \$0.40/ton. Likewise, feeding corn with 1% higher crude protein content reduces SBM inclusion 12 lb/ton of complete feed, which lowers complete feed cost an additional \$0.70/ton. NIR analysis of ingredients is a quick and accurate tool to monitor major nutrient concentrations in ingredients.
- 8. Paylean®.** The addition of 4.5 g/ton of Paylean® during the final 3 weeks prior to slaughter can improve overall feed efficiency and ADG and return between \$1-\$3/pig. Some producers feed 6.75 g/ton of Paylean® in order to take full advantage of improvements in carcass lean. Care should be taken to ensure costs of feeding higher Paylean® levels will result in a better return based on packer grids. Paylean® levels greater than 4.5 g/ton need to be evaluated on an individual basis to determine cost effectiveness.

When making diet cost comparisons, use realistic growth performance and feed efficiency targets based on your own production records and goals. In addition, when comparing feed programs, ensure nutrient values for major ingredients (SBM, corn, fat, etc.) are equivalent so that an accurate comparison can be made of nutrient levels and feed costs. Following the above suggestions should help control feed costs.