



Fat in Swine Diets¹

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Studies on the effects of adding fat to swine diets have yielded variable results. It has now been shown that during certain stages of production, and in some classes of swine, added fat is of benefit.

Growing and Finishing Diets

Growing pigs have consistently shown improved feed efficiency when fat was added to the diet. Fat is a high-energy ingredient. Because swine consume feed to meet their energy requirements, increasing the concentration of energy in the diet allows pigs to consume the same amount of energy even when their food intake is reduced. This is particularly important during the hot summer months. As temperature increases, feed intake declines. The result is slower gains. Adding fat to the diet improves feed conversion and growth during hot weather.

There is a level above which added fat can reduce feed intake to the point that dietary intake of other nutrients such as protein, vitamins, or minerals becomes inadequate. Adding fat to diets that are marginal in concentration of protein or other nutrients results in deficiencies and poor performance. Therefore, increasing other nutrients in the diet is essential when fat is included in the formulation. Adding fat to diets high in protein also decreases feed intake, but intake of protein still remains adequate.

The addition of fat to diets for growing/finishing swine is most beneficial during the warm seasons of the year. Of course, increased performance must be weighed against increased cost of adding fat to swine diets. As

price changes, whether it “pays” to add fat to swine diets may also change (Table 1). If fat is added to the diet of any class of swine, always be sure to include an adequate amount of preservative to prevent the fat from becoming rancid.

Table 1. Value of fat in diets fed to growing/finishing swine during the summer, \$/cwt^a.

| Corn | | Soybean Meal, \$/ton | | | |
|-------|--------|----------------------|-------|--------------------|-------|
| \$/bu | \$/cwt | 180 | 220 | 260 | 300 |
| 2.60 | 4.64 | 12.81 | 13.33 | 13.85 | 14.36 |
| 2.80 | 5.00 | 13.63 | 14.14 | 14.66 | 15.18 |
| 3.00 | 5.36 | 14.44 | 14.96 | 15.47 | 15.99 |
| 3.20 | 5.71 | 15.23 | 15.75 | 16.27 | 16.78 |
| 3.40 | 6.07 | 16.05 | 16.56 | 17.08 | 17.60 |
| 3.60 | 6.43 | 16.86 | 17.38 | 17.89 ^b | 18.41 |
| 3.80 | 6.79 | 17.68 | 18.19 | 18.71 | 19.22 |
| 4.00 | 7.14 | 18.47 | 18.98 | 19.50 | 20.02 |
| 4.20 | 7.50 | 19.28 | 19.80 | 20.31 | 20.83 |
| 4.40 | 7.86 | 20.10 | 20.61 | 21.13 | 21.64 |
| 4.60 | 8.21 | 20.89 | 21.40 | 21.92 | 22.44 |

^aCalculations based on 50 lb pigs fed during summer: 16% CP grower diet fed to 120 lb, 14% CP finisher diet fed to 220 lb; diets contained 5% fat (3,550 kcal ME/kg); feed-to-gain ratio: 2.95 for pigs with fat in the diet, 3.18 for pigs without.

^bExample: If the price of corn is \$3.60/bu and soybean meal is \$260/ton, then fat is worth \$17.89/cwt.

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Rebreeding Performance of Sows

During summer months, the interval from weaning to estrus (coming into heat) in sows may increase. Research indicates that supplementing lactation diets with 10% fat during summer can reduce the weaning-to-estrus interval by 8.3 days; supplementation also increased the percentage of sows that returned to estrus within 10 days after weaning (Figure 1). Added fat had no effect on weaning-to-estrus interval in the winter.

Heavy-milking sows have difficulty consuming enough feed to meet their energy requirements, which is an even bigger problem in the summer, when feed intake declines. Adding fat to lactation diets keeps energy intake at a higher level, which may allow the sow to store more energy as carcass fat at weaning. The improved condition of the sow may be important to reduce weaning-to-estrus interval.

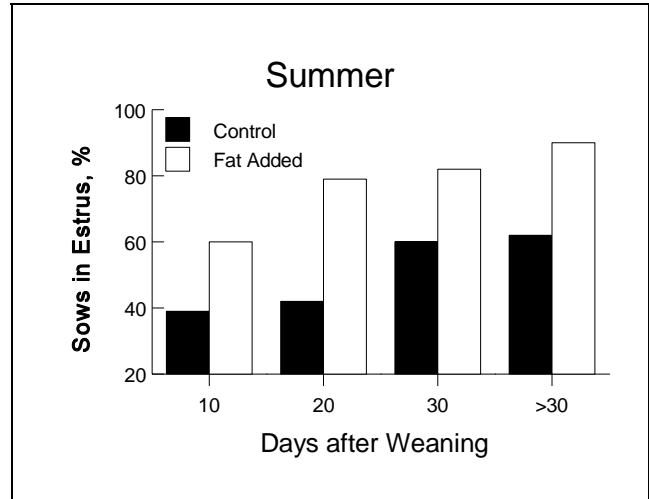


Figure 1. Effect of adding 10% fat to lactation diets during summer months on percentage of sows returning to estrus 10, 20, 30, or >30 days after weaning (from Cox et al., *Journal of Animal Science*, 1983).