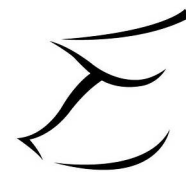




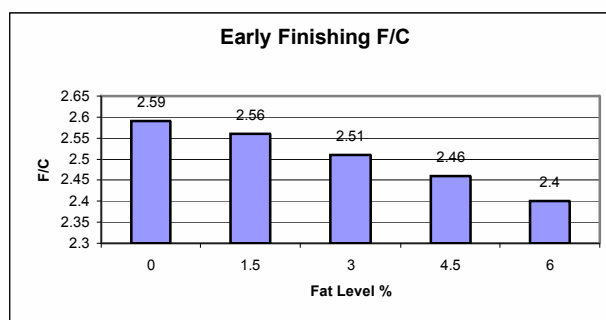
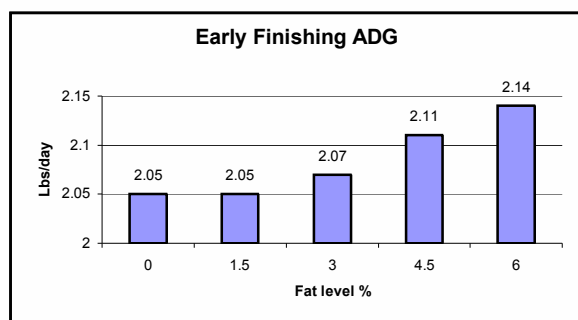
Tech-Line

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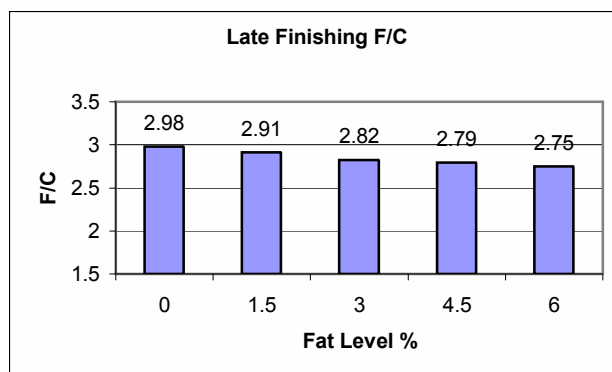
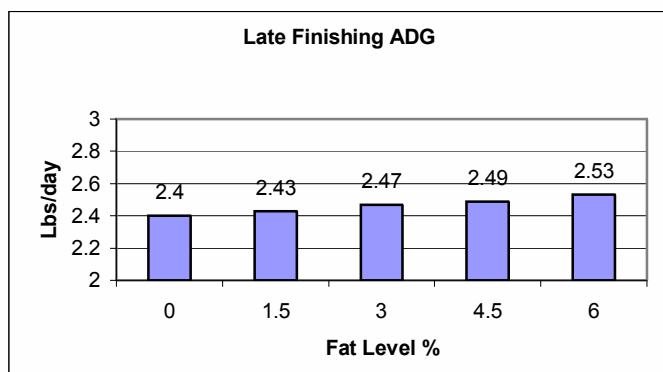


The use of fat in swine finishing diets generates a great deal of discussion. Most nutritionists agree that the addition of fat has a beneficial effect on ADG and feed conversion. The challenge facing nutritionists and swine producers is determining how much fat should be fed and what the economical benefits are. The following research information from the University of Missouri–Columbia¹ tries to determine the optimum fat level for early and late finishing pigs that maximizes pig performance as well as profitability.

The early finishing trial involved 1365 barrows and gilts (TR-4 x C22) and used 5 dietary treatments (RCBD) and 5 inclusion levels of fat (CWG) 0.0, 1.5, 3.0, 4.5, 6.0%. There were 21 pigs/pen and 13 replicate pens per treatment. Initial weight was 112.42 lbs \pm .44 lbs. Pigs were on test for 28 days. Average daily gain and feed conversion results are listed below.



The late finishing trial involved 835 barrows and 871 gilts. It used 5 dietary treatments (RCBD) and 5 inclusion levels of fat (CWG) 0.0, 1.5, 3.0, 4.5, 6.0%. Initial weight was 158.4 lbs \pm .44 lbs. Pigs were on test an average of 25 days. Average daily gain and feed conversion results are listed below.



The results indicate a positive linear response in both ADG and feed conversion to the addition of fat. These trials concur with those of Hubbard Feeds Inc. The main question should now become the economic responses for added fat.

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In the past for fat to be economical it was to be no more than four times the price of corn. Hubbard Feeds nutritionists wanted to find out if the ratio would change when a positive response was noted in both ADG and feed conversion.

In table 1, Hubbard nutritionists analyzed the economics of fat with a 2% improvement in feed conversion for every 1% added fat. A summary of those results are listed below.

Table 1	% Added Fat					
	0	1	2	3	4	5
Feed conversion	3.00	2.94	2.88	2.82	2.76	2.70
WEIGHT GAIN	200	200	200	200	200	200
TOTAL LB FEED	600	588	576	564	552	540
FEED \$/PIG	\$31.46	\$31.51	\$31.53	\$31.22	\$31.48	\$31.42
Cost/lb of gain	.157	\$.158	\$.158	\$.158	\$.157	\$.157
Corn price \$.0357/lb SBM \$.09/lb Fat \$.14/lb						

In this example, with an improvement in feed conversion only and a lower cost of gain, the maximum fat:corn price ratio was 4:1.

In table 2, Hubbard nutritionists analyzed the economics of fat with a 0.5% improvement in ADG for every 1% added fat along with an improvement in feed conversion.

Table 2	% Added Fat					
	0	1	2	3	4	5
Feed conversion	3.00	2.94	2.88	2.82	2.76	2.70
WEIGHT GAIN	200	201	202	203	204	205
TOTAL LB FEED	600	591	582	573	563	554
FEED \$/PIG	\$31.46	\$31.90	\$32.32	\$32.71	\$33.01	\$33.53
Cost/lb of gain	\$.157	\$.159	\$.16	\$.161	\$.162	\$.163
RETURN/PIG ON ADDED WEIGHT		\$0.008	\$0.041	\$0.102	\$0.249	\$ 0.365
Corn price \$.0357/lb SBM \$.09/lb Fat \$.18/lb Market \$/lb Live\$.45/lb						

In this example, even though the cost per pound of gain increased, the return over feed cost also increased due to the increase in weight gain from the incremental fat. An economical fat:corn price ratio was 5:1.

Hubbard Recommendations:

Today's modern genetics show a positive response in ADG and feed conversion when fed high net energy diets with additional high quality fat. High net energy diets would be reflective of the use of high levels of synthetic lysine and low fiber. The question Hubbard nutritionists sought to answer was at what price fat was economical to feed. Our recommendations are as follows:

- * If considering a feed conversion response only; Use a 4:1 fat:corn price ratio
- * If considering both an ADG and F/C response; Use a 5:1 fat:corn price ratio
When the fat:corn price ratio becomes greater than 5.5:1; reformulation may be necessary as economics warrant.
- * When environmental factors limit feed intake, the economics of added fat may be as high as 6.5:1 fat:corn price ratio