FATS AND PROTEINS RESEARCH FOUNDATION, INC.

Director's Digest

FRED D. BISPLINGHOFF, D.V.M.
Director Technical Services

7150 ESTERO BLVD. • APT. 906
FT. MYERS BEACH, FL 33931
AREA CODE 813 — 463-4744

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TALLOW FOR FEEDER PIGS

Michael C. Brumm
Associate Professor - Animal Science
University of Nebraska

Previous research at the University of Nebraska has documented that newly arrived feeder pigs often fail to consume as much feed as normally expected for pigs of similar size and weight. This reduction in feed intake results in a comparable reduction in energy intake if the diet offered is formulated with corn and soybean meal. One possible method to increase the energy intake by the newly arrived pig is the inclusion of a fat source in the diet to increase the caloric density of the diet.

An experiment was designed to determine if the positive response of feeder pigs to receiving diets containing tallow, found in early experiments, is dependent on a minimum level of dietary tallow addition.

One hundred twenty (120) commingled feeder pigs were purchased from an auction market in southern Missouri. After assignment to the experimental receiving diets at arrival, the pigs were housed in a partially slatted modified open front (MOF) facility with 10 pigs per pen (9.6 ft^2/pig), with three pens per experimental diet.

The receiving diets were formulated to contain 0, 2, 4 or 6% tallow substituted for corn (Table 1). Lysine per unit of metabolizable energy was calculated to range from 2.72 to 2.45 for the

Table 1. Experimental Receiving Diets

Ingredient	Tallow Level (%)			
	0	2	4	6
Corn	1271	1231	1191	1151
44 Soy Meal	460	460	460	460
Oats	200	200	200	200
Limestone	17	17	17	17
Dical PO_4	20	20	20	20
Vitamin/TM/Se Premix	6	6	6	6
Salt	6	6	6	6
Mecadox (50 g/T)	20	20	20	20
Tallow	----	40	80	120
Calculated Composition (NRC, 1988)				
Crude Protein, %	16.7	16.5	16.4	16.2
Lysine, %	.87	.86	.86	.85
Me, Kcal/lb	1449	1490	1531	1571
G Lys/Mcal ME	2.72	2.62	2.55	2.45

Table 2. Effect of Receiving Diets Containing Tallow on Pig Performance

Item	% Tallow				SE[a]
	0	2	4	6	
Pig Weight, lb					
Initial	44.2	44.1	44.3	44.1	
21 d[b]	63.7	65.8	67.8	67.4	1.2
Final	234.5	234.0	242.6	237.5	2.0
Average Daily Gain, lb					
0-21 d[b]	.93	1.04	1.12	1.11	.06
0-Final[c]	1.42	1.46	1.54	1.54	.03
Average Daily Feed, lb					
0-21[c]	2.54	2.70	2.73	2.66	.07
0-Final[d]	4.74	4.83	4.95	5.03	.10
Feed/Gain					
0-21 d[d]	2.74	2.61	2.44	2.42	.12
0-Final	3.34	3.31	3.22	3.28	.03
No. Dead/Removed	1	2	2	3	

[a]Pooled Standard Error of the Mean
[b]Linear ($P < .05$)
[c]Linear ($P = .05$)
[d]Linear ($P < .075$)

0 to 6% tallow diets respectively. Receiving diets were floor-fed twice daily for the first seven days and then self-fed from a four-hole feeder for another 14 days.

After the three-week receiving period, all pigs were fed a common 16% grower diet to 125 pounds followed by a 14% finisher diet. All diets contained 50 g/T Mecadox for four weeks, followed by 100 g/T chlortetracycline until 125 pounds liveweight and 30 g/T BMD (bacitracin methylene disalicylate) to slaughter.

Pigs were sent to slaughter beginning the week the pen averaged 225 pounds with all pigs weighing 225 pounds or greater sold. Pigs not sold remained on test for up to three weeks, with individual pigs removed the week they weighed 225 pounds.

RESULTS

The addition of graded levels of tallow to the 21 day receiving diets linearly improved average daily gain and feed:gain for the 21 day receiving period. This response, especially the feed:gain response, is typical of the response by pigs to diets containing added fat.

Overall, the addition of graded levels of tallow to the receiving diets linearly improved average daily gain from arrival to slaughter weight. Average daily gain improved from 1.42 lb/day for pigs offered the 0% tallow diet to 1.54 lb/day for pigs offered the 4% and 6% tallow receiving diets. This response of improved daily gain was associated with a slight increase in daily feed with no difference in feed:gain. It appears from this data that the overall improvement in daily gain and daily feed intake reached a plateau at the 4% fat level (Table 2).

When combined with results of previous experiments utilizing 4 or 5% tallow in receiving diets, these results support the use of tallow in feeder pig receiving diets to enhance average daily gain from purchase to market. Although statistically the response was linear up to 6% added tallow, it appears that 4% tallow is as effective as 6% in three-week receiving diets in improving commingled feeder pig performance to slaughter weights.