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THE EFFECT OF FAT ADDITIONS TO SOW DIETS DURING LATE GESTATION ON PIG SURVIVABILITY

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Death of pigs during the first few days after birth is one of the most frustrating occurrences in a swine farrowing facility. Much of this death loss has been attributed to starvation and lack of adequate energy stores in the baby pig at birth. Recent work at several universities has suggested that the addition of 15 to 20% fat to the sow's diet prior to farrowing may increase stores of liver glycogen in the baby pig and increase the pig's survival rate. Under normal conditions this level of fat is impractical, if not impossible, to handle in a feed mill. The research reported herein was conducted to evaluate the use of 10% yellow grease in the sow's diet for 1 week prior to farrowing.

Experimental Procedure

Seventeen sows were allotted by alternating their assignment to the two prefarrowing treatments on the basis of farrowing due dates. The treatments consisted of a control diet which is our standard lactation diet containing 10% beet pulp and a treatment diet containing 10% yellow grease and 10% beet pulp. The treatment diet was adjusted to contain the same quantity of protein as the control diet. Table 1 shows the diets used in this trial. The diets were fed at 4 lb. per day for 7 days prior to farrowing and then ad libitum to the end of a 21-day lactation.

Sow weights were recorded at day 107 of gestation, after farrowing and day 21 of lactation. Pigs were weighed at birth and 21 days. Pig survival rate was calculated based on live pigs at birth. Standard management procedures were followed with baby pig processing including clipping needle teeth, iodine placed on naval cords, ear notching, iron injections and castration.

Results

The results of the trial are shown in table 2. Essentially no differences were found for any of the criteria. Although average initial weights were slightly different between groups of sows, total sow weight change from 107 days gestation until the end of lactation was the same. Number of pigs born as stillbirths and live pigs was essentially the same between groups and survivability to 21 days was identical (67%) between the two groups.

No advantage in pig birth weight or litter birth weight was seen due to the additional fat in the sow's diet. Pig growth until 21 days of age was also unaffected by the additional energy consumed by their dams.

Thus, the addition of 10% yellow grease did not give a response in pig weights or survival. The failure to obtain a response to additional fat in the diet may be related to several factors. Seven days feeding prior to parturition may be too short a time to obtain a response. The fat level of 10% is below the 15 to 20% level at which a response has been found at other universities. However, it should be pointed out that 10% fat is very difficult to handle in a feed mill and higher levels nearly impossible. Also, the response to fat has occurred with concurrent additions of the vitamin choline, which was not included in the high fat diet in this experiment.

Summary

Seventeen sows were fed a control or 10% fat diet from 7 days prior to farrowing through a 21-day lactation. Pig weights at birth and 21 days as well as survivability of the pigs were evaluated. No differences were found in any of the criteria evaluated. Fat added as 10% yellow grease and fed for that period of time appears to be of no value in increasing efficiency in the farrowing house.

Table 1. Dietary Treatments (%) Provided the Sows From Day 107 of Gestation Through a 21-Day Lactation

	Control	10% fat
Ground yellow corn	68.5	56.1
Soybean meal (48%)	18.0	20.4
Ground beet pulp	10.0	10.0
Yellow grease	--	10.0
Dicalcium phosphate	2.0	2.0
Limestone	.8	.8
Trace mineral salt (high zinc)	.5	.5
Premix ^a	.1	.1

^a To supply per lb.: vitamin A, 2000 IU; vitamin D, 200 IU; vitamin E, 2.5 mg; riboflavin, 1.25 mg; pantothenic acid, 5 mg; niacin, 8 mg; choline, 25 mg and vitamin B₁₂, 5 micrograms.

Table 2. Effect of Dietary Treatments on Pig Performance and Survivability

	Control	10% fat
Number of sows	9	8
Sow weights, lb.		
107 days	533	558
After farrowing	500	526
21 days	500	528
Number of pigs		
Stillbirths	.89	1.00
Born alive	8.8	8.4
21 days	5.9	5.6
Percent survival	67	67
Litter weights, lb.		
Birth	31.7	26.6
21 days	72.6	71.1
Avg. pig weights, lb.		
Birth	3.5	3.3
21 days	13.9	12.3