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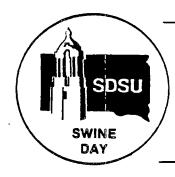
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THE EFFECT OF FEEDING FREQUENCY AND FEED FLAVORING ON PERFORMANCE OF LACTATING SOWS AND GILTS

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Inadequate feed consumption by sows (below 10 1b/day) in the farrowing house accompanied by large weight losses during lactation is a major problem in the swine industry. Excessive sow weight loss is often associated with poor milking performance and delayed return to estrus after weaning. High temperature in the farrowing house is often to blame for inadequate feed intake. However, even under the most ideal management the problem often exists. The trial reported herein is a part of a regional study (NCR-89, Confinement Management of Swine) to evaluate the effect of feeding frequency and the addition of sugar to the diet on sow feed intake and lactation performance.

Experimental Procedure

Twenty-six crossbred sows were allotted to four experimental management treatments on the basis of parity, post-farrowing weight and location in the farrowing barn. The management treatments were as follows:

- 1. Control diet fed 1 time/day
- 2. Control diet fed 3 times/day
- 3. Sugar diet fed l time/day
- 4. Sugar diet fed 3 times/day

The experimental diets were corn and soybean meal based containing 14% protein (table 1). The sugar diet contained 2.5% feed grade sugar substituted for corn in the diet. Feeding frequency was either once per day at 8 a.m. or three times a day at 8 a.m., 11:45 a.m. and 4:45 p.m. In both cases sows were to be on full feed. Differences in feed consumption observed were intended to be a function of number of feedings per day or type of diet and not a result of limit feeding. Sow and pig weights were taken at birth, 10 days and 21 days of lactation and feed consumption was recorded daily.

Table 1. Composition of Experimental Diets (%)

Ingredient	Control	Sugar
Ground corn Sugar Soybean meal, 44% Ground beet pulp Dicalcium phosphate Limestone Trace mineralized salt, 8% zinc Vitamin premix	70.40 15.70 10.00 2.35 .55 .50	67.90 2.50 15.70 10.00 2.35 .55 .50

Results and Discussion

The results of pig performance due to lactation treatments is shown in table 2. Thirteen sows and gilts received each of the diets and 13 sows and gilts were included in each feeding reqime. No differences were observed among treatments in number of pigs at birth or in survival after birth. In this trial, gilts farrowed as many pigs as sows and saved significantly more pigs than sows to 10 and 21 days of lactation. Average pig weights were not statistically different at birth, 10 days or 21 days due to treatments or due to parity of sows. Litter weights at 10 days were greater for sows and gilts fed one time daily only when they were fed sugar diets. Although some of the numerical differences still existed, the statistical difference due to feeding frequency was lost by 21 days of lactation. Litter weights at 10 and 21 days were greater for gilts than sows, a reflection of greater pig survivability within the gilt litters.

Sow weight and feed consumption data are shown in table 3. Sows weighed significantly more than gilts at all weigh dates. However, no treatment affects on sow weights were observed. During the first 7 days of lactation, sows and gilts fed 3 times daily consumed significantly more feed regardless of diet than those fed once daily. However, this did not result in differences in sow weight change or pig weights and differences in feed consumption were not observed at 14 or 21 days of lactation.

In this study, no advantage to increased frequency of feeding or addition of sugar to the diet was observed. This may be a result of adequate feed consumption in all treatment groups (<10~1b/day). Different results may have been found if feed consumption levels of the control groups had been lower.

Table 2. Effect of Feeding Frequency and Feed Flavoring on Litter Performance

Diet Feedings/day	Control One	Control Three	Sugar One	Sugar Three	Par Sows	ity Gilts
No sows No gilts	3 3	4 3	4 3	3 3		
Avg No Live Pi Birth 10 days 21 days	gs 9.7 8.2 8.0	10.9 9.5 9.4	9.2 8.5 8.4	9.9 8.4 8.2	10.0 7.4 7.3	9.9 9.9 ^a 9.7 ^a
Avg Pig Weight Birth 10 days 21 days	<u>, kg</u> 1.55 3.30 5.90	1.55 3.15 5.70	1.70 3.25 6.00	1.60 2.70 5.20	1.63 2.80 5.75	1.58 3.40 5.65
Avg Litter Wei Birth 10 days c 21 days	ghts, kg 15.10 27.30 48.30	17.00 30.60 53.40	15.45 28.45 50.05	15.25 23.00 43.00	15.68 21.58 43.03	15.73 33.10a 54.35

P < .01 difference between sows and gilts.

P<.10 difference between sows and gilts.

 $P\!<\!.05$ heavier litter when sows and gilts were fed 1 time per day only when receiving the sugar diets.

Table 3. Effect of Feeding Frequency and Feed Flavoring on Sow Weight and Feed Consumption

Diet	Control	Control Three	Sugar One	Sugar Three	<u>Parity</u>	
Feedings/day	One				Sows	Gilts
Sow Weight, 1b						
Birth	439	479	433	454	503	400 ^a
10 days	434	468	427	459	501	393 ^a
21 days	424	450	425	446	486	386 ^a
Sow Feed Consump	tion, 1b					
Sow Feed Consump 7 days ^b	59	80	59	78	67	71
14 days	141	160	142	146	149	146
21 days	220	254	228	218	235	224
Per day of	10.5	12.1	10.9	10.4	11.2	10.7
lactation				,		

P<.01 difference between sows and gilts.

b

Summary

Twenty-six sows and gilts were allotted to treatments consisting of two feeding frequencies (1 or 3 times daily) and two diets (control or control plus 2.5% sugar). Although some differences existed between sows and gilts, no differences in pig numbers or weights were observed due to treatments. Sow weights were unaffected. Feed consumption increased for sows and gilts during the first 7 days of lactation due to feeding 3 times per day. However, no differences were observed by 14 and 21 days of lactation. Feed consumption was considered adequate for all treatment groups.

P < .01 higher feed consumption with 3 feedings per day regardless of the diet fed.