NONRUMINANT NUTRITION: SOW NUTRITION

183 Effects of increasing duration of feeding high dietary lysine and energy prior to farrowing on sow and litter performance under commercial conditions.

Kiah M. Gourley[1], Analicia J. Swanson[1], Jason C. Woodworth[1], Joel M. DeRouchey[1], Mike D. Tokach[1], Steve S. Dritz[1], Robert D. Goodband[1], Brent Frederick[2], *[1]Kansas State University, [2]Christensen Farms*

A total of 472 mixed parity sows were used in a study to evaluate the effects of supplying increased Lys and energy for the last 2 or 7 d before farrowing on sow and litter performance. On d 106 of gestation, sows were blocked by parity and weight and allotted to one of three corn-soybean meal-based dietary treatments, which included: 1) 12.5 g SID Lys and 6.5 Mcal/d ME from d 107 to 112 of gestation, then 28 g SID Lys and 9.4 Mcal/d ME until farrowing; 2) 12.5 g SID Lys and 6.5 Mcal/d ME from d 107 to 112, then 40 g SID Lys and 13.3 Mcal/d ME until farrowing; 3) 40 g SID Lys and 13.3 Mcal/d ME from d 107 until farrowing. Data were analyzed for treatment within parity effects using the GLIMMIX procedure of SAS. Sow weight gain from d 106 to 113 increased ($P < 0.05$) as the length of feeding increased SID Lys and energy increased. Sow backfat gain from d 106 to 113 of gestation increased ($P < 0.05$) in females fed treatment 3 vs. treatment 1. There was no evidence ($P > 0.05$) for difference in female BW or backfat loss from d 113 of gestation until weaning. Average total born and born alive piglet birth weight was greater ($P < 0.05$) in gilts fed treatment 2 or 3 vs 1, with no evidence ($P > 0.05$) for difference in average piglet birth weight in sows, or weaning weight in gilts and sows. Piglet survival after cross-foster to weaning was improved ($P < 0.05$) in sows fed treatment 2 vs. 1 or 3, but not in gilts. Providing high Lys and energy intake from d 107 or 113 to farrowing increased birth weight in gilts, while providing high Lys and energy intake from d 113 increased pre-weaning piglet survival in sows.

Table 1. Effects of increased SID Lys and Energy and feeding duration on sow and litter performance within parity category

	Gilts				Sows			
Response	Trt 1	Trt 2	Trt 3	SEM	Trt 1	Trt 2	Trt 3	SEM
Sow weight change, kg								
d 106 to 113[2]	2.1	4.0	7.1	0.87	2.3	3.3	8.8	0.55
d 113 to weaning	-43.7	-46.6	-49.5	2.70	-47.5	-45.7	-49.4	1.83
Sow backfat change, mm								
d 106 to 113[3]	0.3	0.7	0.9	0.23	0.2	0.5	0.6	0.15
d 113 to weaning	-7.9	-6.9	-7.4	0.58	-4.6	-4.8	-4.5	0.38
Mean piglet BW, g								
Total born[1]	1,285[b]	1,370[a]	1,361[a]	30.5	1,430	1,426	1,465	19.8
Born alive[1]	1,306[b]	1,396[a]	1,391[a]	29.7	1,463	1,462	1,505	19.0
24 h	1,433	1,491	1,494	33.1	1,580	1,593	1,612	21.4
Weaning	6.01	5.98	5.82	0.131	6.58	6.57	6.54	0.085
Litter gain 24 h to wean, kg	53.8	51.5	49.7	1.61	55.2	56.8	55.5	1.04
Survival from birth to 24 h, %	95.9	97.1	96.6	0.80	94.9	95.3	96.1	0.59
Survival after cross foster[2], %	92.4	90.2	92.0	1.33	86.6[b]	90.9[a]	88.2[b]	1.04

[1]Significant treatment within parity differences. Values within parity category without a common superscript differ ($P < 0.05$).
[2]All treatment means significantly different from each other ($P < 0.05$).
[3]Main effect: 1 vs 3 ($P < 0.05$).

Key words: birth weight, lactation, gestation