

**361 Increasing duration of feeding high dietary lysine and energy before farrowing on colostrum quality and yield in mixed parity sows.** Analicia J. Swanson<sup>1</sup>, Kiah M. Gourley<sup>1</sup>, Cassandra K. Jones<sup>1</sup>, Joel M. DeRouchey<sup>1</sup>, Mike D. Tokach<sup>1</sup>, Steve S. Dritz<sup>1</sup>, Robert D. Goodband<sup>1</sup>, Brent Frederick<sup>2</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>Christensen Farms

A total of 472 mixed parity sows were used from d 106 of gestation until weaning to determine the effects of Lys and energy intake in the last 7 d before farrowing on colostrum production, composition, and immunoglobulin G concentrations. On d 106 of gestation, sows were weighed, blocked by parity and weight, and allotted to dietary treatments. Treatments were based on corn-soybean meal diets fed to provide 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 from until farrowing; 2) 12.5 g SID Lys and 6.5 Mcal/d ME from d 107 to 112 of gestation, then 40 g SID Lys and 13.3 Mcal/d ME from until farrowing; 3) 40 g SID Lys and 13.3 Mcal/d ME from d 107 of gestation until farrowing. After birth of the first piglet, a 50 mL colostrum sample was collected. Colostrum samples were analyzed for fat, protein, total solids, lactose, and IgG concentrations. Individual piglets were weighed at birth and 24 h to determine colostrum intake and yield. Data was analyzed for treatment within parity and treatment main effects. There was a treatment within parity difference observed where sows on treatment 3 had decreased ( $P < 0.05$ ) fat and total solids concentrations compared to treatment 1 sows, with no evidence for difference within gilts. IgG concentrations tended to increase ( $P = 0.081$ ) in females fed treatment 2 compared to treatment 1, regardless of parity. Total protein and lactose concentrations as well as colostrum intake and yield were similar across treatments, regardless of parity. In conclusion, feeding high Lys and energy for 7 d before farrowing decreased fat and solid concentrations in colostrum in sows, but did not impact other colostrum nutrients or colostrum production.

Table 1. Increasing duration of high dietary lysine and energy before farrowing on colostrum quality and yield in mixed parity sows

Response	Gilts				Sows			
	Trt 1	Trt 2	Trt 3	SEM	Trt 1	Trt 2	Trt 3	SEM
Count, n	46	46	45	--	113	110	112	--
Fat <sup>1</sup> , %	5.4	5.4	5.3	0.21	4.7 <sup>a</sup>	4.6 <sup>ab</sup>	4.4 <sup>b</sup>	0.13
Protein, %	14.8	14.9	15.1	0.27	15.3	14.9	15.1	0.17
Solids <sup>1</sup> , %	24.7	25.3	25.1	0.36	24.6 <sup>a</sup>	24.1 <sup>ab</sup>	24.0 <sup>b</sup>	0.22
Lactose, %	3.2	3.1	3.2	0.05	3.1	3.2	3.2	0.03
IgG <sup>2</sup> , mg/ml	107	125	105	1.6	114	131	126	1.3
Colostrum yield <sup>3</sup> , kg	5.3	5.5	5.3	0.19	6.0	6.1	6.1	0.12
Colostrum intake <sup>4</sup> , g	445	437	436	17.0	461	480	460	11.0

<sup>1</sup>Significant treatment within parity differences. Values within parity category without a common superscript differ ( $P < 0.05$ ).

<sup>2</sup>Main effect of treatment: treatment 1 vs. treatment 2 ( $P=0.081$ ).

<sup>3</sup>Total colostrum intake for the litter.

<sup>4</sup>Average colostrum intake of a piglet

**Key words:** lactation, immunoglobulin G, colostrum