

PSV-8 Effects of soybean meal concentration in lactating sow diets on sow and litter performance.

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A total of 133 sows (Line 241; DNA, Columbus, NE) were used to evaluate the effect of increasing soybean meal concentration in lactating sow diets on sow and litter performance. Sows were blocked by body weight and parity on d 112 of gestation and allotted to 1 of 3 treatments of increasing soybean meal (25, 30, or 35% of total diet). Diets were formulated to contain 1.05% SID Lys with L-Lys HCl decreasing as soybean meal increased. All other amino acids and nutrients were formulated to meet nutrient requirement recommendations with L-threonine, DL-methionine, L-tryptophan, and L-valine added to the 25% SBM diet. Diets were fed from d 112 of gestation until weaning (d 20 ± 2). Litters were cross-fostered until 48 h after farrowing to equalize litter size. Sow average daily feed intake from d 0 to 7 was similar across dietary treatments. However, ADFI decreased from d 7 to 14, d 14 to weaning, and overall, (linear, $P = 0.017$) sow BW loss, and tended to increase (quadratic, $P = 0.052$) backfat loss from farrowing to weaning. There was no evidence for difference between dietary treatments in litter size, litter weight, nursing litter weight gain at weaning, or wean to estrus interval. Sow serum urea nitrogen concentrations taken on d 14 increased (linear, $P = 0.001$) as soybean meal concentration increased; however, there was no evidence for difference in serum creatinine. In summary, sow feed intake decreased and sow weight and backfat loss increased with increasing soybean meal concentration with no differences observed for litter performance.

Table 1. Effect of increasing soybean meal concentration in lactating sows¹

	Soybean meal concentration			SEM	Probability, $P <$	
	25%	30%	35%		Linear	Quadratic
Count, n	44	43	44	--	--	--
Parity	2.0	2.0	2.0	0.15	0.998	0.157
Sow average daily feed intake, kg						
d 0 to 7	3.6	3.6	3.6	0.109	0.684	0.798
d 7 to 14	6.5	6.4	6.0	0.134	0.001	0.234
d 14 to wean	7.3	7.1	6.5	0.160	0.001	0.227
Farrow to wean	5.7	5.6	5.3	0.111	0.001	0.314
Sow BW change (farrow to wean), kg	-7.3	-6.9	-11.7	1.46	0.017	0.110
Sow backfat change (farrow to wean), mm	-2.3	-1.9	-2.9	0.31	0.100	0.052
Litter average daily gain, g	3,002	2,936	3,032	72.7	0.724	0.288
Wean to estrus interval, d	4.5	4.4	4.4	0.33	0.883	0.968
Urea nitrogen ² , mg/dl	20.71	25.37	28.10	1.138	0.001	0.346
Creatinine ² , mg/dl	3.67	3.62	3.81	0.230	0.579	0.584

¹A total of 131 sows and their litters were used in a 21-d study. There were 3 dietary treatments and 43 or 44 replications per treatment.

²Sows were bled on d 14 of lactation and were fasted for 10 h before sample collection. Samples were centrifuged after collection and serum was used in analysis.

Key words: lactation, soybean meal, sow

PSV-12 Effects of increasing iron dosage in newborn pigs on preweaning performance and hematological criteria.

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Newborn pigs (n = 336; 1.7 kg BW) were used in a 21-d study evaluating the effects of increasing injectable Fe on preweaning pig performance and blood Fe status. A total of 28 litters were used and at processing (d 3 after farrowing) all piglets were weighed and six barrows and six gilts/litter were allotted to 1 of 6 treatments in a CRD. Treatments consisted of a negative control receiving no Fe injection and increasing injectable Fe (Gleptoforte, Ceva Animal Health, Lenexa, KS) to achieve 50, 100, 150, 200-mg, or 200-mg plus a 100-mg injection on d 11 post-farrowing. Piglets were weighed and bled on d 3, 11, and 21 of age to determine growth performance and blood Fe status. Preweaned pig growth data and hematological criteria were evaluated using individual pig as the experimental unit with hematological criteria analyzed as a repeated measure. Increasing injectable Fe up to 100-mg improved (quadratic; $P < 0.05$) ADG and d 21 BW with no further improvement thereafter (Table 1). There were no evidence of differences ($P > 0.10$) between the 200-mg and 200 + 100-mg treatments for growth. Significant treatment × day interactions ($P < 0.001$) were observed for hemoglobin (Hgb) and hematocrit (Hct). The interactions were the result of decreased values for pigs receiving no Fe injection or an Fe injection of 100-mg or less, while pigs receiving an Fe injection greater than 100-mg had increased values at d 21. Pigs receiving the 200 + 100-mg treatment had increased ($P < 0.05$) Hgb and Hct values compared to pigs receiving a single 200-mg Fe injection on d 21. Results suggest that a 100-mg Fe injection is sufficient for growth performance during the preweaning phase, but an Fe injection greater than 100-mg is needed to maximize blood criteria. An extra 100-mg Fe injection at d 11 did not influence growth performance but does increase Hgb and Hct at weaning.