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Effect of spray-dried plasma in diets fed to lactating sows on litter weight at weaning and subsequent farrowing rate

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Introduction: Previous research (Crenshaw et al., 2007) reported that relatively low dietary levels (0.25 to 0.50%) of spray-dried animal plasma (SDP) fed to parity 1 sows resulted in increased feed intake and reduced wean to estrus interval; however, mature sows fed SDP consumed less feed without compromising wean to estrus interval, but had increased litter weight and more marketable pigs at weaning. The objectives of this study were to evaluate the effects of SDP in lactation feed on litter weight at weaning, pig survival to weaning, wean to first service interval, and subsequent litter size at a commercial farrowing site that utilized Danbred sows fed parity specific diets.

Diets: Parity specific lactation feed treatments contained either 0 or 0.5% SDP and were fed from the time sows entered the farrowing room (gestation day 110 ± 3) until weaning (avg. = 17.5 d of lactation). Lactation diets for young sows (parity ≤ 2) and for mature sows (parity > 2) were formulated to be equivalent in metabolizable energy (3265 and 3223 kcal/kg) and total lysine content (1.19 and 1.09%). All sows were fed a common gestation diet after weaning.

Facilities and Animals: The farrowing site had 14 rooms with 60 crates per room, each fitted with nipple drinkers accessible by the sow and piglets. Feed for 32 crates per room were delivered by augers from one set of dual feed bins and for the other 28 crates feed was delivered from a different set of dual feed bins to enable the feeding of parity specific diets. Danbred multi-parous sows (n = 600) farrowed during summer months were used in the study. Young sows (n =

221) or mature sows (n = 379) were placed in separate rooms to facilitate feeding of the parity specific lactation diets. There were 290 control sows and 310 sows fed SDP. Sows were fed to ad libitum intake within day 3 after parturition; however, sow feed intake data was not recorded. Pigs per litter after cross-fostering (within 48 h of age), pigs weaned per litter, and litter weight at weaning (n = 553) were recorded. Wean to first service interval and pigs born alive in the subsequent litter were also recorded.

Results: No significant ($P > 0.05$) parity group by SDP interactions were detected for any of the response variables. Pigs weaned per litter, pig mortality to weaning, wean to first service interval and pigs born alive in the next litter was not different between diets ($P > 0.05$). Average pig weight at weaning (5.35 vs. 5.01 kg) and subsequent farrowing rate (92.3 vs. 86.8%) was increased for sows fed SDP, while post-weaning sow mortality (0.80 vs 4.36%) was reduced for sows fed SDP ($P < 0.05$). Also, there was a tendency ($P = 0.06$) for sows fed plasma to produce heavier litter weights at weaning (50.6 vs. 48.8 kg).

Conclusions: The improvements noted in average pig weight at weaning and subsequent farrowing rate of sows suggest greater lifetime productivity when lactation diets are supplemented with 0.5% SDP.

References:

Crenshaw, J. D, R. D. Boyd, J. M. Campbell, L. E. Russell, R. L. Moser, and M. E. Wilson. 2007. Lactation feed disappearance and wean to estrus interval for sows fed spray-dried plasma. J. Anim. Sci. 85:3442-3453.