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## Effect of spray-dried plasma in lactation feed on pig survival and litter weight at a commercial farm in Italy

H. Van Iersel<sup>1</sup>, C. Rodriguez<sup>1</sup>, J. Polo<sup>1</sup>, J.M. Campbell<sup>2</sup>, J.D. Crenshaw<sup>2\*</sup> and, Luca Rotelli<sup>3</sup>

<sup>1</sup>APC Europe, S.A., Granollers, Spain, <sup>2</sup>APC Inc., Ankeny, IA, <sup>3</sup>Prodotti AI-CHEM, Milan, Italy

**Introduction:** Spray-dried plasma (SDP) in lactating sow diets has been shown to increase litter and average pig weight at weaning (Crenshaw et al., 2007, 2008). Objectives for this study were to evaluate the effects of 0.5% SDP in lactation feed on pig mortality and litter weight at 21 d of age at a commercial farm using a liquefied mash feeding system.

**Materials and Methods:** The commercial farm was located in Italy and utilized a computer controlled liquefied mash feeding system to distribute lactation feed 3 times per day. Liquefied feed was delivered to individual sow farrowing crates with bowl feeders by stainless steel tubing. A controlled feeding regimen was used that gradually increased the amount of dry matter feed per sow per day from farrowing to weaning. Due to the liquid feed system configuration, sows fed the control (CON) lactation diet were located in one building, while sows fed a test diet containing 0.5% spray-dried porcine plasma (SDP) were located in a different building; however, buildings were of identical design and in close proximity to each other and managed by the same animal caretakers. Diets were formulated to be equal in ME and total lysine. Multiparous F1 (TOPIGS dam by Duroc sire) sows were fed lactation diet from entry into the farrowing room until weaning. Sows farrowed during the months of July and August, 2010. Litters were provided supplemental creep feed (budgeted 250 g/pig) from d 7 to weaning. Pigs were cross-fostered by 2 days after birth. Litter size and litter weight was recorded at d 2 and 21 of age. Pig mortality was calculated from d 2 to 21 of age. Litter performance data was analyzed for the main effects of diet, parity, and diet by parity interaction using PROC GLM procedures of SAS. Diet by parity interaction was not significant ( $P > 0.10$ ) for any variables, so the final model included only the main effect of

diet and parity. Parity of sows averaged  $5.5 \pm 0.1$  and was not different ( $P > 0.10$ ) between diets. Sow or litter was used as the experimental unit. There were a minimum of 335 litters (CON, 165; SDP, 170) used in the data analysis. Values reported are least square means of dietary treatment.

**Results:** After cross-foster at 2 d of age, average pigs per litter (CON, 11.09; SDP, 11.14), litter weight (CON, 23.3 kg; SDP 22.8 kg) and average pig weight (CON, 2.11 kg; SDP, 2.05 kg) did not differ ( $P > 0.10$ ) by diet. At 21 d of age, there were more ( $P < 0.01$ ) pigs per litter for SDP (10.61) vs CON (10.13) resulting in reduced ( $P < 0.01$ ) mortality from 2 to 21 d of age for SDP (4.63%) vs CON (8.44%). Litter weight at 21 d (CON, 63.8 kg; SDP, 63.3 kg) did not differ ( $P > 0.10$ ) by diet, but average pig weight at 21 d was less ( $P < 0.01$ ) for SDP (6.03 kg) versus CON (6.32 kg).

**Conclusions:** Sows fed SDP during lactation had more pigs per litter at 21 d and reduced pig mortality. Although average pig weight at 21 d was less for the SDP group, litter weight at 21 d was not different. The controlled feeding regimen may have limited adequate nutrient intake of sows fed SDP to support a greater milk production demand needed for the larger litter size. The reduced pig mortality resulted in an additional 0.48 pigs per litter for lactating sows fed SDP.

### References:

- Crenshaw et al., 2007. J. Anim. Sci. 85:3442-3453.
- Crenshaw et al., 2008. Proc. Allen D. Leman Swine Conf., p 47.