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Effect of a supplement containing spray-dried plasma fed from mating to day 35 of gestation on farrowing rate of multiparous sows

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Introduction: Spray-dried plasma (0.5% in the diet) fed to lactating sows during summer months (Crenshaw et al., 2008) or fed to gestating and lactating sows at a PRRS-unstable herd (Campbell et al., 2006) improved farrowing rate approximately 6.2% in both studies. The objective of this study was to evaluate the effects of feeding a supplement containing 50% spray-dried plasma to sows from mating to 35 d after mating on farrowing rate and litter size.

Materials and Methods: The study was conducted in Santa Catarina state in Brazil during summer months. Multiparous (parity 1-8; average parity = 4.2 $\pm$ 0.2) PIC sows (N = 309) were serviced with mixed semen from 3-4 boars, placed in individual gestation crates by farrowing order and randomly assigned by parity to diet. The control (C) group (N = 153) was fed 2 kg feed/d per sow. The test (T) group (N = 156) was fed 2 kg feed/d plus 40 g supplement/d to provide 20 g spray-dried plasma, 25 g total protein, 100 mg vitamin E, 20 mg vitamin C, and 236 kcal ME/d. Sows were fed their allotted diet treatment from mating to 35 d after mating. Afterwards all sows were fed a common gestation diet until they were moved to the farrowing facility. The gestation diet was based on corn, soy meal, and soy hulls and formulated to contain 14% CP, 0.76% lysine and 2.9 Mcal ME/kg. The supplement contained spray-dried plasma, sugar, isolated soy protein, wheat gluten meal, and vitamins C and E. The gestation facility was an open-sided roofed building with automated fans and curtains. Feed was delivered to individual crates with hoppers designed to drop allocates of feed into a trough used for both water and feed. The supplement was added to the hopper and dropped with the feed into the trough. Data were analyzed for the main effects of diet, parity, and the interaction of diet by parity using mixed model procedures of SAS.

Results: Diet by parity interactions were not different ($P > 0.05$) for any of the response variables. Significant ($P < 0.05$) diet effects (C vs T) were noted for percentage of sows that farrowed (81.1 vs 90.8) and percentage of sows that returned to estrus after mating (11.6 vs 5.2). Percentage of sows that died or aborted, and total and live pigs born per litter were not different ($P > 0.20$) for diet.

Conclusions: Feeding 40 g/d of the supplement to provide 20 g/d of spray-dried plasma per sow from mating to 35 d after mating resulted in improved farrowing rate and reduced percentage of sows that returned to estrus after mating. Although sows fed supplement consumed more nutrients per day, the improvement in farrowing rate was similar to previous research noting improvement in farrowing rate of sows fed diets with 0.5% spray-dried plasma.

References: Crenshaw et al. 2008. Effect of spray-dried plasma in diets fed to lactating sows on litter weight at weaning and subsequent farrowing rate. Proc. Allen D. Leman Swine Conf., p 47.

Campbell et al. 2006. Use of statistical process control analysis to evaluate the effects of spray-dried plasma in gestation and lactation feed on sow productivity in a PRRS-unstable farm. Proc. Amer. Assoc. Swine Vet., p 139-14