PSVI-15 Effects of Vitamin B12, Sodium Salicylate, and electrolyte supplementation on alleviating Porcine Reproductive and Respiratory Syndrome symptoms in nursery pigs. Blaire Todd, Carson De Mille, Samuel Gerrard, Emma T. Helm, Locke A. Karriker, Nicholas K. Gabler, *Iowa State University*

Vitamin B12, sodium salicylate, and electrolyte treatments are commonly used to modulate pathogen induced fevers and aid in appetite stimulation. Therefore, the objective of this study was to determine the extent to which a B12 and sodium salicylate or an isotonic electrolyte treatment could improve growth performance and feed intake, and reduce the febrile response in porcine reproductive and respiratory syndrome (PRRS) virus inoculated pigs. A total of 32 PRRS-naïve gilts (7.7 ±1.5 kg BW; PIC Camborough x PIC 337) were selected and randomly assigned to individual pens across four treatments (n = 8/trt): 1) Control, PRRS-naïve, 2) PRRS virus infected, 3) As #2 plus B12 and sodium salicylate supplementation, and 4) As #2 plus isotonic electrolyte supplementation. On days post inoculation (dpi) 0, pigs were inoculated with PRRS virus. B12 was administered weekly, sodium salicylate and the electrolyte solution were given orally daily in the water or fed daily from dpi 4-18. Body temperatures and feed intakes were measured daily, and body weights, G:F, and PRRS serology assessed weekly for 21 dpi. Over the 21 day test period, irrespective of treatment, PRRS virus infection resulted in a significant increase in PRRS viremia and antibody titers compared to the control ($P < 0.05$). Compared to treatment #2, B12 + sodium salicylate and electrolyte treatments did not have differing body temperatures, ADG, ADFI or G:F. However, PRRS infection resulted in a significant increase in average body temperature compared to the control (39.8 vs. 39.3 °C, respectively, $P = 0.021$). Compared to the control, PRRS infection reduced overall ADG by 83% (0.54 verses 0.09 g/d, $P < 0.001$), end BW by 9 kg ($P < 0.001$) and ADFI by 11% ($P < 0.001$) compared to the control. Although treatment did not improve pig performance in the face of PRRS, mortality rates were significantly ($P < 0.050$) reduced compared to the PRRS only treatment.

Key words: porcine reproductive and respiratory syndrome virus, aspirin, appetite stimulation

PSVI-19 Evaluating the effects of day of iron injection after farrowing on nursery performance and hematological criteria. Hayden E. Williams[1], Cierra Roubicek[1], Joel M. DeRouchey[1], Jason C. Woodworth[1], Steve S. Dritz[1], Mike D. Tokach[1], Robert D. Goodband[1], Andrew Holtcamp[2], *[1]Kansas State University, [2]Ceva Animal Health, LLC.*

Weaned pigs (n = 311; 5.9 kg BW) were used in a 59-d study evaluating the effects of Fe injection timing after birth on nursery pig performance and hematological criteria. Pigs were weaned at 21 d and allotted to pens based on preweaning Fe treatment with BW balanced across pens within a treatment with 5 or 6 pigs/pen and 10 pens/treatment. The preweaning treatments were a negative control receiving no Fe injection or 200-mg of injectable Fe (Gleptoforte, Ceva Animal Health, Lenexa, KS) provided in a single injection on d 2, 4, 6, 8, or 10 after birth. All pigs were fed common diets after weaning that contained 110 mg/kg of added Fe as $FeSO_4$ provided from the trace mineral premix. Growth data were analyzed as a completely randomized design with pen as the experimental unit. Hematological criteria were measured as a repeated measure with pig as the experimental unit. Overall, increasing the age of pigs receiving a 200-mg Fe injection from 2 to 4 or 6 d after birth increased (quadratic; $P = 0.013$) d 80 ending BW with a decrease in BW when Fe was provided on d 8 or 10 (Table 1). Not providing an Fe injection after birth worsened ($P < 0.05$) ADG, ADFI, and d 80 ending BW. Significant treatment×day interactions ($P < 0.001$) were observed for Hgb and Hct values. These interactions occurred because pigs not receiving an Fe injection after birth had values that increased from d 21 to 35 while pigs receiving an Fe injection had values that decreased from d 21 to 35. While it is common practice to provide an Fe injection within the first 48 hours of birth, these results suggest delaying injection until d 4 or 6 may increase nursery final weight.

Table 1. Effects of injectable Fe timing after birth on nursery pig performance and hematological criteria

	Fe injection day[1]						
Item[2]	0[3]	2	4	6	8	10	SEM
BW, kg[4]							
d 80	32.9	34.5	36.8	37.1	36.3	35.8	0.74
d 0 to 80							
ADG, g[5]	456	480	518	501	512	503	13.6
ADFI, g[5]	742	775	830	813	806	808	19.3
G:F[5]	0.616	0.618	0.624	0.616	0.636	0.621	0.8635
Hgb, g/dL[6]							
d 21	4.1	11.4	11.5	11.4	11.2	10.9	0.21
d 35	7.2	10.4	10.6	10.9	10.1	10.5	0.22
Hct, %[6]							
d 21	14.1	39.0	38.9	38.9	38.4	37.4	0.71
d 35	26.9	35.1	35.9	37.2	34.5	35.4	0.73

[1]200 mg of Fe (Gleptoforte, Ceva Animal Health, LLC., Lenexa, KS) administered on d 2, 4, 6, 8, or 10 after farrowing.
[2]BW = body weight, ADG = average daily gain, ADFI = average daily feed intake, and F/G = feed efficiency, Hgb = hemoglobin, and Hct = hematocrit.
[3]Negative control with pigs receiving no Fe injection.
[4]Level main effect (quadratic; P=0.013).
[5]0 vs. others (P<0.05).
[6]Treatment×day interactions (P<0.001).

Key words: gleptoferron, nursery, timing

NONRUMINANT NUTRITION

PSVI-18 Establishing ideal inclusion rate of fermented soybean meal (FSBM) in nursery rations.

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To determine the optimal level of fermented soybean meal (FSBM; Fermex 200, Purina Animal Nutrition, Arden Hills, MN) in nursery diets, a total of 176 weaned pigs (5.96 kg BW) were blocked by initial BW and allotted to 1 of 4 treatments: Control consisted of an enzymatic soybean protein (HP 300, Hamlet Protein, Horsens, Denmark)-poultry byproduct diet or formulated with 5%, 10% and 15% FSBM to achieve FSBM1, FSBM2, and FSBM3 treatments. Pigs remained on the same dietary treatment for phase 1 (d 0–14) and 2 (d 14–29), while a common diet was fed in phase 3 (d 29–40). Individual pig weights and pen feed disappearance were recorded weekly. Blood was taken via jugular venipuncture and analyzed for complete blood cell count on d 0, 14, 29 and 40 from one pig/pen (n = 44) that represented the average BW for each pen. Data were analyzed using MIXED procedures of SAS (Cary, NC) with dietary treatment as the fixed effect, and initial BW block as the random effect. Orthogonal contrasts were performed to test for linear, quadratic and cubic responses to increasing levels of FSBM. A quadratic response to increasing FSBM was observed in ADG (P = 0.06) and ADFI (P = 0.04) during phase 1&2 (d 0–29). Moreover, the heaviest BW was observed in pigs fed 10% FSBM on d 29 (quadratic, P = 0.06), however the difference diminished by the end of the trial. A tendency for a linear increase with increasing level of FSBM was observed in overall feed efficiency (d 0–40, P = 0.07). Pigs fed 10% FSBM had the lowest WBC, neutrophil, and red blood cell count. Results of this study suggest FSBM fed to pigs improves growth performance and alters blood cell characteristics, and 10% is the optimal level of FSBM to include in early nursery diets.