while both mitigants increased Ct value in feed when co-inoculated with PRRSV and PEDV.

Table 1. Cycle threshold values for porcine epidemic diarrhea virus (PEDV) and porcine reproductive and respiratory syndrome virus (PRRSV) when inoculated either alone or together following application of feed additives[1]

		Mitigant				
Virus:	Assay:	Untreated	MCFA[2]	Formaldehyde[3]	SEM	*P* =
PEDV	PEDV	31.2	33.5	34.2	0.69	0.052
PRRSV	PRRSV	30.0[b]	34.2[b]	42.0[a]	1.78	0.009
Co-inoculated						
PEDV quantification	Duplex	30.8[b]	31.9[a]	32.5[a]	0.23	0.006
PRRSV quantification	Duplex	30.0[b]	33.8[a]	34.7[a]	0.85	0.019

[1] Swine feed samples were inoculated with 10^6 $TCID_{50}$/g of PEDV, PRRSV, or PEDV and PRRSV co-inoculation then analyzed using one of three quantitative real time reverse transcription polymerase chain reaction assays including an assay detecting PEDV only, an assay detecting PRRSV only, or an assay detecting and independently reporting quantification of both PEDV and PRRSV (duplex).
[2] Medium chain fatty acid blend (MCFA; 1:1:1 ratio of C6:C8:C10; Sigma Aldrich, St. Louis, MO) at 0.50% inclusion.
[3] Commercial formaldehyde-based feed additive (SalCURB; Kemin Industries, Des Moines, IA) at 0.33% inclusion.
[a,b,c] Means within virus lacking common superscripts differ $P < 0.05$.

Keywords: feed mitigant, porcine epidemic diarrhea virus, porcine reproductive and respiratory syndrome virus

PSVI-8 Meta-regression Analysis to Determine the Relationship Between Growing Pig Body Weight and Variation.

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The swine industry has been constantly evolving to select animals with improved performance traits and to minimize variation in body weight (BW) in order to meet packer specifications. Therefore, understanding variation presents an opportunity for producers to find strategies that could help reduce, manage, or deal with variation of pigs in a barn. A systematic review and meta-analysis was conducted by collecting data from multiple studies and available data sets in order to develop prediction equations for coefficient of variation (CV) and standard deviation (SD) as a function of BW. Information regarding BW variation from 16 papers was recorded to provide approximately 204 data points. Together, these data included 117,268 individually weighed pigs with a sample size that ranged from 104 to 4,108 pigs. A random-effects model with study used as a random effect was developed. Observations were weighted using sample size as an estimate for precision on the analysis, where larger data sets accounted for increased accuracy in the model. Regression equations were developed using the nlme package of R to determine the relationship between BW and its variation. Polynomial regression analysis was conducted separately for each variation measurement. When CV was reported in the data set, SD was calculated and vice versa. The resulting prediction equations were: $CV\ (\%) = 20.04 - 0.135 \times (BW) + 0.00043 \times (BW)^2$, R^2=0.79; $SD = 0.41 + 0.150 \times (BW) - 0.00041 \times (BW)^2$, $R^2 = 0.95$. These equations suggest that there is evidence for a decreasing quadratic relationship between mean CV of a population and BW of pigs whereby the rate of decrease is smaller as mean pig BW increases from birth to market. Conversely, the rate of increase

of SD of a population of pigs is smaller as mean pig BW increases from birth to market.

Keywords: variation, coefficient of variation, standard deviation, swine, weight

PSVI-3 Gestational Inulin Supplementation Stabilizes Glucose Metabolism and Improves Reproductive Performance of Sows.

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The beneficial effects of dietary fiber on sows performance have been widely studied, but it's still unclear how fermentable fiber affects sows glucose metabolism and reproduction. The present study aimed to investigate the effects of late gestational inulin supplementation on sows pre-farrowing glucose metabolism and reproductive performance. A total of 106 sows were allotted randomly to 2 groups, receiving either a control diet with 4% wheat flour, or a diet with 4% inulin, from gestation day 85 to 110, both diets met nutrient requirements expressed by NRC. On day 111, sows blood glucose was tested before a common lactation diet meal, then subsequent glucose levels were measured at 1, 2 and 3 hour after meal. Sows were weighed on initial, entry and weaning days. The numbers of live-born and stillborn piglets as well as mortality were recorded. Inulin supplementation didn't affect sows average daily intake during lactation, and also no significant difference was observed in weaning bodyweight and backfat thickness between two groups. However, the relative wean to entry BW loss was significantly lower in inulin fed sows than control (11.3% vs 13.5%) ($P< 0.05$). Moreover, postprandial glucose response was less steep in inulin group compared with control, especially glucose concentration at 1h after meal was 10.2% higher in the control group sows. Although the sows farrowing duration was similar in two groups, inulin significantly increased ($P< 0.05$) proportion of born alive from 90.1% to 93.0% and reduced ($P=0.10$) still born from 7.3% to 5.4%. Post-foster mortality and livability did not differ between treatments, litter birth weight and average birth weight were not different either. In conclusion, Sows fed 4% inulin diet at late gestation tended to have lower weight loss, slower rate of postprandial blood glucose response and higher born alive and lower stillborn.

Keywords: inulin; blood glucose concentration; sows; reproductive performance