178 VevoVitall® supplementation on the performance, nutrient digestibility, blood profile and ammonia gas emission in weaning and growing pigs. S. K. Jang*, Y. H. Choi, Y. H. Jin, L. G. Pao, Y. S. Noh, and Y. Y. Kim, *Seoul National University, Seoul, Korea*.

This study was investigated to evaluate the effect supplementation of VevoVitall ® (DSM Nutrition Korea Ltd.) on growth performance, nutrient digestibility, urine pH, blood profile, ammonia emission in weaning and growing pigs. A total of 128 pigs weaned at 24 ± 3d of age were allotted to treatments in 8 replicates with 4 pigs per pen. Treatments included: 1) NCon (basal diet), 2) PCon (basal diet + antibiotic colistin sulfate 0.12%, 3) NeVe (basal diet + VevoVitall ® 0.5%), 4) PoVe (basal diet + antibiotic colistin sulfate 0.12% + VevoVitall ® 0.5%). During weaning period (0 to 5 week), NCon treatment showed the lowest on body weight, average daily gain (ADG) and average daily feed intake (ADFI) among all treatments (P<0.05). However, there were not significantly different among NeVe, Pcon and PoVe treatments. Although there were not significantly different among all treatments, pigs fed NCon had lower ADG than other treatments during growing period. In ADG, Pcon, NeVe and PoVe were increased 6.78%, 5.65% and 8.62%, respectively, compared with Ncon. Also, the ADFI in PCon and PoVe groups were significant higher than other groups (P<0.05). There were not significantly different in nutrients digestibility and blood urea nitrogen level among all dietary treatments during experiment period. There were no significant differences the number of red blood cell, lymphocyte, and total protein among all treatments. The urinary pH was decreased by supplementing benzoic acid(NeVe, PoVe) during weaning phase (P=0.069) and growing phase (P=0.059). The pH in feces tended to be lowered in pigs fed the diets supplemented with benzoic acid (NeVe & PoVe treatments) than in pigs fed the diets without benzoic acid by -9.01% and -4.05% respectively. Although the difference was not statistically significant, ammonia gas emission was also reduced by benzoic acid supplement during growing period. In conclusion, this experiment suggested that VevoVitall ® supplementation resulted in improving growth performance and decreased urine pH of pigs during weaning and growing phase.

Key Words: VevoVitall, Weaning growing pig, Ph, digestibility

179 Effects of dietary γ-Butyrobetaine and L-Carnitine on carnitine concentrations in various muscle tissues of finishing pigs. J. M. Benz*, J. L. Nelssen, M. D. Tokach, R. D. Goodband, J. M. DeRouchey, and S. S. Dritz, *Kansas State University, Manhattan*.

One-hundred-twenty-five barrows with an initial BW of 74.8 kg were used in a 34 d study to determine the effect of dietary L-carnitine and γ-Butyrobetaine on carnitine concentrations in various muscle tissues in finishing pigs. A primary method of L-carnitine production is from the fermentation of γ-Butyrobetaine, which is similar to the biological process that naturally occurs in the liver and kidneys. Dietary treatments were corn-soybean meal based with a control diet or diets containing either L-carnitine (100 ppm), γ-Butyrobetaine (100 ppm), or a combination of L-carnitine (50 ppm) and γ-Butyrobetaine (50 ppm). At the end of the study, longissimus, diaphragm, heart, and kidney tissues were collected from 40 pigs. Pigs fed supplemental L-carnitine, γ-Butyrobetaine and the combination of L-carnitine and γ-Butyrobetaine increased (P < 0.01) free carnitine concentration over pigs fed the control diet in the longissimus (162.8, 158.7, 156.7 vs 111.7 ppm), diaphragm (200.2, 212.2, 210.7 vs 150.5 ppm), and heart (101.5, 89.2, 102.7 vs 66.1 ppm). L-carnitine and the combination of L-carnitine and γ-Butyrobetaine increased (P < 0.01) free carnitine concentration over the control in the kidney (17.0, 16.3 vs 12.3 ppm). Therefore, supplementing dietary γ-Butyrobetaine and L-carnitine can be used to increase free carnitine concentrations of organ and muscle tissues.

Key Words: L-carnitine, γ-Butyrobetaine, Carnitine concentrations

180 Effects of two TID lysine concentrations, Optipak®, Paylean®, and their combinations, on the growth performance and carcass characteristics of finishing pigs. J. R. Bergstrom*, M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.

A total of 1,207 pigs (PIC 337 × 1050; BW 99.8 kg) were used in a 28-d experiment to evaluate the effects of two TID lysine concentrations, Optipak®, Paylean®, and their combinations on growth performance and carcass characteristics. There were 6 reps per treatment and 19 to 26 pigs/pen. Pigs were allotted to six corn-soybean meal-based dietary treatments. Four diets were formulated to 0.80% TID lysine; including: 1) control diet, the control diet with 2) 0.25% Optipak®, 3) 5 ppm Paylean®, or 4) both Optipak® and Paylean®. Treatments 5 and 6 were formulated to 0.94% TID lysine and contained 5 ppm Paylean®, one without Optipak® and the other with 0.25% Optipak®. Pigs fed diets containing Paylean® had improved (P<0.04) ADG, F/G, and final weight. When diets contained Paylean®, ADFI tended (P<0.07) to be lower when TID lysine was increased from 0.80 to 0.94%. There were no other differences in growth performance among the treatments. For carcass characteristics, live weight, HCW, and yield were improved (P<0.04) for pigs fed Paylean®. Overall, loin depth increased (P<0.03) when Optipak® was included in the diet. This experiment provides further evidence that Paylean® improves late-finishing pig growth performance, HCW, and yield. Although Optipak® did not improve growth performance, it increased loin depth. The different responses to Paylean® and Optipak® suggest that the incentives for justifying their use need to be evaluated independently.

Table 1.

TID Lys, %	0.80	0.80	0.80	0.80	0.94	0.94
Optipak®	-	+	-	+	-	+
Paylean®	-	-	+	+	+	+
Growth						
D 0 wt, kg	99.8	100.7	100.7	99.4	100.3	98.9
ADG, g	875	907	966	984	962	953
ADFI, g	2,595	2,717	2,731	2,722	2,613	2,622
G/F	0.33	0.33	0.35	0.36	0.37	0.36
Carcass						
Live wt., kg	123.9	124.3	125.7	126.1	126.1	125.2
HCW, kg	93.0	93.5	95.7	95.7	95.7	95.3
Yield, %	75.3	75.1	76.1	76.0	76.1	75.8
Backfat – 10th rib, mm	17	18	18	18	17	18
Loin depth, cm	6.22	6.25	6.15	6.43	6.30	6.45
FFLI	50.5	50.1	50.2	50.5	50.6	50.3

Key Words: Pig, Lysine, Ractopamine