

Nonruminant Nutrition: Feed Additives

T128 The effects of Paylean® and α -lipoic acid on growth performance and carcass characteristics of finishing pigs. J. R. Bergstrom*, J. L. Nelssen, R. D. Goodband, M. D. Tokach, J. M. DeRouchey, and S. S. Dritz, *Kansas State University, Manhattan*.

A total of 48 gilts (initially 96 kg) were used to evaluate the effects of Paylean® and α -lipoic acid on late finishing pig performance and carcass characteristics. Pigs were blocked by weight and randomly allotted to one of four dietary treatments in a 22-d experiment. There were 2 pigs per pen and 6 pens per treatment. Pigs were fed corn-soybean meal-based diets formulated to 0.95% true ileal digestible lysine. Treatments were arranged as a 2 × 2 factorial with main effects of Paylean® (0 or 10 ppm) and α -lipoic acid (0 or 300 ppm). There were no Paylean® × α -lipoic acid interactions ($P > 0.36$) observed. For the overall study, ADG, final weight, and G:F were increased ($P < 0.04$) for pigs fed Paylean®. Pigs fed Paylean® had increased ($P < 0.04$) hot carcass weight (HCW), yield, loin eye area at the 10th-rib (LEA), and standardized fat-free lean (SFFL). Average backfat thickness (Avg. BF) tended ($P < 0.06$) to decrease for pigs fed Paylean®. Tenth-rib backfat increased ($P < 0.05$) for pigs fed α -lipoic acid. In conclusion, pigs fed 10 ppm Paylean® had improved growth performance and carcass characteristics. Feeding 300 ppm of α -lipoic acid did not affect growth performance, but did tend to increase 10th-rib fat depth.

Table 1. Growth and carcass data

Paylean®, ppm	0		10		SEM	P<	Paylean® α -lipoic acid	P<
	0	300	0	300				
ADG, g/d	932	1011	1127	1098	62	0.04	NS	
G:F	0.37	0.37	0.43	0.42	0.02	0.01	NS	
Final wt., kg	116.2	117.8	120.5	119.9	1.6	0.04	NS	
HCW, kg	81.3	83.3	86.2	87.8	1.3	0.01	NS	
Yield, %	70.4	70.8	71.7	72.9	0.6	0.02	NS	
Avg. BF depth, mm	22	23	18	21	1	0.06	NS	
10 th rib BF, mm	14	19	13	15	1	NS	0.05	
LEA, cm ²	48.9	47.0	53.7	53.5	2.3	0.03	NS	
SFFL, kg	46.4	45.3	50.4	50.0	0.9	0.01	NS	

Key Words: Pigs, Paylean®, α -Lipoic Acid

T129 Effects of tannin added to low-iron antibiotic-free diet on performance, hematology, iron status, fecal microflora and incidence of diarrhea in weaned pigs. S. H. Lee, P. L. Shinde, J. Y. Choi, I. K. Kwon, S. I. Park, and B. J. Chae*, *Kangwon National University, Chuncheon, Kangwon-Do, Republic of Korea*.

This study investigated the effects of tannin added to low Fe antibiotic-free diets on the performance, hematological status, fecal microflora and incidence of diarrhea in weaning pigs. One hundred and eight weaned pigs (Landrace × Yorkshire × Duroc, 6.46 ± 1.04 kg initial body weight) were allotted to 3 treatments each comprising of 4 replicates with 9

pigs in each. The basal diet for each phase (Phase 1: d 0 to 14; Phase 2: d 15 to 28) was formulated to contain minimum Fe and the mineral premix used was prepared without addition of FeSO₄. Dietary treatments were: basal diet (low-Fe antibiotic free diet, T1), basal diet added with tannin (Albumin tannate, 0.025%, T2) and basal diet added with Fe and antibiotic (T3). Two piglets from each pen were bled at 14 and 28 d of experiment to determine their hematological status and plasma Fe concentration while feces were collected on d 14 to enumerate the microbial populations. Pigs fed with T1 diets had lower ($P < 0.05$) ADG (242 vs 264 and 271 g/d) and higher incidence of diarrhea (37.5%) than pigs fed T2 (26.4%) and T3 (36.1%) diets. The population of total anaerobic bacteria was highest in the feces of pigs fed T1 diet and lowest in those fed T2 diet, while the populations of *Bifidobacterium* spp. and *Lactobacillus* spp. was higher in pigs fed T1 diet than pigs fed T2 and T3 diets. The hematological status on d 14 was not affected by dietary treatments but on d 28 pigs fed T2 diets had lower ($P < 0.05$) erythrocyte count, hemoglobin and hematocrit values. The plasma Fe concentration on d 14 was lower ($P < 0.05$) in pigs fed T2 (87 μ g/dl) diet than pigs fed T3 (128 μ g/dl) diet while on d 28 pigs fed T1 and T2 diet had lower ($P < 0.05$) plasma Fe (86 and 70 vs 127 μ g/dl) than pigs fed T3 diet. These results suggest that tannin added to diets low in Fe without antibiotics resulted in performance of pigs comparable to pigs fed high Fe diets with antibiotics but tannin added to diets reduced incidence of diarrhea. However, tannin added to low Fe diets had a negative influence on the hematological and plasma Fe status.

Key Words: Tannin, Weanling Pigs, Fecal Microflora

T130 Effect of *Euchaena mexicana* Schrad diets on nutrient digestibility and nitrogen metabolism for Wulong Goose. B. W. Wang*, M. A. Zhang, X. P. Wu, G. L. Liu, and X. H. Jia, *Qingdao Nongye University, Qingdao, Shandong Province, China*.

One trial was conducted to study nutrition digestibility of *Euchaena mexicana* Schrad (EMC) diets for Wulong Goose. Thirty-two geese of 9 months old were selected and divided into four groups randomly, with eight geese in each group. Four groups were fed with the isocaloric and isonitrogenous diets of different EMC contents (12, 19, 25 and 31%), respectively. The results showed that, as dietary EMC increased, dry matter (DM) digestibility was decreased significantly, meanwhile the digestibility of crude fiber (CF), neutral detergent fiber (NDF) and acid detergent fiber (ADF) increased significantly ($P < 0.05$). The ratio of apparent essential amino acid (EAA) digestibility (except Leu) among the four groups had significant difference ($P < 0.01$). the content of NH₃-N in feces dropped ($P > 0.05$). There were no significant differences in net protein utilization (NPU), N apparent digestibility, N deposition and Ca apparent digestibility in different groups ($P > 0.05$). The apparent digestibility of P in different groups elevated, while there was significant difference between group D and A ($P < 0.01$), and there was significant difference between group D and B ($P < 0.05$).

Key Words: Wulong Goose, *Euchaena mexicana* Schrad, Nitrogen Metabolism