SWINE SPECIES:
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0752 Apparent and standardized ileal amino acids digestibility for different protein feedstuffs fed at two dietary protein levels for growing pigs.
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This study determined the apparent and standardized ileal amino acids digestibility (AID or SID) for growing pigs fed three protein feedstuffs with different fiber types at two dietary crude protein (CP) levels. Twenty boars (Yorkshire × Landrace) with 35 kg body weight and fitted with a simple T-cannula at the distal ileum were used. The treatments were three protein feedstuffs [soybean meal (SBM), canola meal (CM) or corn distillers dried grains with solubles, (cDDGS)] and two dietary CP levels (18 or 14%). Eighteen pigs were allocated to the experimental diets using a replicated 6 × 2 Youden square design. In each of the two experimental periods, two pigs were offered a nitrogen free diet to determine basal endogenous amino acid flow. Digesta was collected for 2 d after 5 d of adaptation. Reducing dietary CP level by 4% did not affect AID of DM and AA or SID of AA. Except for Met, Trp, Cys and Pro, AID for all the other AA were greater ($P < 0.05$) in the SBM diet compared with the CM diet. Apparent ileal digestibility for Gly and Asp was greater ($P < 0.05$) for the SBM diet compared with the DDGS diet. The AID for Ile, Leu, Phe, Val, Ala, Tyr and Asp was greater ($P < 0.05$) in the DDGS diet compared with the CM diet. There was protein feedstuff × protein level interaction ($P < 0.05$) for AID of Lys because in the diets with 18% CP, the AID of Lys was greater ($P < 0.05$) in the SBM and cDDGS diets compared with the CM diet, whereas the AID of Lys was not different among the protein feedstuffs in diets with 14% CP. Standardized digestibility was greater ($P < 0.05$) in the SBM diet compared with the CM diet for all AA except Trp and Pro, whereas the SID of Gly and Asp were greater ($P < 0.05$) in the SBM diet compared with the cDDGS diet. Standardized digestibility for Ile, Leu, Val, Ala, Tyr and Asp were greater in the cDDGS diet compared with the CM diet. It was concluded that differences in AA digestibility observed for the pigs were related to differences in chemical, including fiber, profiles of the protein feedstuffs used but independent of dietary CP level.

Key Words: amino acids, protein feedstuff, protein level

0753 Effects of high levels of nicotinic acid on growth, carcass traits, and meat quality of finishing pigs.
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A total of 1232 pigs (PIC 337 × 1050; initially 27.0 ± 0.51 kg) were used in a 98-d study to determine the influence of high doses of added nicotinic acid (NA) on growth, carcass traits, and meat quality of finishing pigs during the summer months. Average daily high, mean, and low temperatures were 27.5, 23.9, and 20.5°C, respectively. There were 28 pigs per pen and 11 replications per treatment. Four dietary treatments were made by adding 0, 350, 700, or 1050 mg/kg NA (Lonza, Allendale, NJ) to a corn-soybean meal basal diet that contained 30 mg/kg of added NA. Diets were fed in four phases with the same NA concentrations in each phase. On d 98 of the study, two pigs per pen (one barrow and one gilt) were transported to a commercial abattoir. Carcass traits and pH decline (45 min, 3, and 21 h) were measured at the abattoir. Afterward, a 40-cm segment of boneless LM was used to determine purge loss and ultimate pH following a 10-d aging period. Then 2.5-cm boneless chops were cut and used to measure subjective color and marbling, objective color (L*, a*, b*), 24-h drip loss, and NA concentration. Overall (d 0 to 98), increasing NA had no effect on ADG or G:F; however, ADFI tended ($P = 0.07$) to increase. Carcass traits were not influenced by NA. Forty-five min and 21 h pH were decreased with increasing NA ($P < 0.01$), but ultimate pH was not different. Purge loss, drip loss, and NA concentrations were not influenced by treatment. The a* and b* were increased ($P < 0.05$) with increasing NA; however, subjective color scores were not different among treatments. Overall, high doses of NA had little influence on growth, carcass traits, and meat quality of finishing pigs raised in a commercial setting.

Key Words: finishing pigs, niacin, nicotinic acid

Table 0753. Effects of added dietary NA on growth and meat quality of finishing pigs

	Dietary NA, mg/kg					Probability, $P <$	
Item	30	380	730	1080	SEM	Linear	Quadratic
d 0 to 98							
ADG, kg	0.82	0.82	0.83	0.82	0.005	0.40	0.50
ADFI, kg	2.03	2.08	2.10	2.07	0.017	0.07	0.71
G:F	0.404	0.395	0.393	0.398	0.003	0.15	0.90
L*	53.12	54.67	54.56	54.16	0.82	0.54	0.21
a*	18.20	18.30	18.89	19.05	0.39	0.05	0.58
b*	16.05	16.45	16.88	17.09	0.40	0.04	0.89