
246 Copper Hydroxychloride Improves Growth Performance and Reduces Diarrhea Frequency of Weanling Pigs Fed a Corn-Soybean Meal Diet.

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Two experiments were conducted to determine effects of Cu hydroxychloride on growth performance and diarrhea frequency of pigs fed corn-soybean meal (SBM) diets. In Exp. 1, 80 weanling pigs (6.80 ± 1.69 kg) were allotted to 2 dietary treatments with 4 pigs per pen and 10 pen replicates per diet. Pigs were fed a control diet without supplemental Cu or the control diet supplemented with 150 mg/kg of Cu from Cu hydroxychloride. Diarrhea scores were assessed visually using a score from 1 to 5 (1=normal feces to 5=watery diarrhea). Data were analyzed using Mixed Procedure of SAS and a chi-squared test was used to analyze diarrhea frequency among treatments. Results indicated that ADG and final BW were greater ($P \leq 0.05$) and fecal scores were reduced ($P \leq 0.05$) for pigs fed the Cu hydroxychloride diet compared with pigs fed the control diet (Table 1). In Exp. 2, 150 pigs (10.22 ± 1.25 kg) were used in a completely randomized design and allotted to 3 dietary treatments with 5 pigs per pen and 10 replicate pens per treatment. The control diet was a

Table 1. Growth performance and fecal score of pigs fed diets without and with supplemental Cu hydroxychloride

Items	Control	Diets			SEM	P-value
		Cu-100 mg/kg	Cu-150 mg/kg	Cu-200 mg/kg		
Experiment 1						
Overall ADG, g	262.21		321.84		0.02	0.005
Overall fecal score	2.48		2.09		0.09	0.011
Experiment 2						
ADG (d 0-14), g	359.13 ^b	461.11 ^a		464.30 ^a	0.03	0.002
Overall fecal score	2.23 ^a	2.09 ^b		2.11 ^b	0.08	0.037

^{a,b}Means within a row that do not have a common superscript differ, $P < 0.05$.

corn-SBM diet without supplemental Cu and 2 additional diets were formulated by adding 100 or 200 mg/kg Cu from Cu hydroxychloride to the control diet. Fecal scores were recorded as explained for Exp. 1 and on the last day of the experiment, a blood sample was collected from 1 pig per pen and tumor necrosis factor- α , IgA, blood urea N, total protein, and albumin were measured. Data and diarrhea frequency were analyzed as explained for Exp. 1. Phase 1 ADG and final BW on d 28 were greater ($P \leq 0.05$) and fecal scores were reduced ($P \leq 0.05$) for pigs fed the Cu hydroxychloride diets compared with pigs fed the control diet. However, no differences among treatments were observed for any of the blood characteristics. In conclusion, supplementation of Cu hydroxychloride to diets fed to weanling pigs improved growth performance and reduced diarrhea frequency.

Key Words: growth performance, pigs, copper hydroxychloride