Trisbasic Copper Chloride and Copper Sulfate as Copper Sources for Weanling Pigs\textsuperscript{1,2}

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\textbf{TRACT:}\hspace{1em} We conducted the 28-d experiment involving a total of 915 pigs to assess the relative efficacy of trisbasic Cu chloride (Cu\textsubscript{2}(OH)\textsubscript{3}Cl) and Cu sulfate pentahydrate (CuSO\textsubscript{4}·5H\textsubscript{2}O) in diets for weanling pigs. Experiments 1 and 2 were conducted at an experimental station (University of Kentucky), and Exp. 3 was conducted at a commercial feed company's swine research facilities (United Feeds, Inc.). The basal diet was a fortified corn-soybean meal-dried whey diet (1.25 \% lysine) with no antimicrobials in Exp. 1 or with caradox (5.5 mg/kg) in Exp. 2 and 3. In Exp. 1, 135 pigs were weaned at 27 to 31 d and fed the basal diet without or with 100 or 200 pp m Cu from Cu chloride, or 100 or 200 pp m Cu from Cu sulfate from 7.9 to 17.7 kg BW. The 200 pp m level of Cu from Cu sulfate improved ADG (P < .10), and both levels of Cu from Cu chloride tended to improve feed:gain. In Exp. 2, 150 pigs were weaned at 27 to 31 d and fed the basal diet without or with 100, 150, or 200 pp m Cu from Cu chloride, or 200 pp m Cu from Cu sulfate from 8.9 to 20.8 kg BW. Addition of 200 pp m Cu improved ADG (P < .08) and ADFI (P < .01), but not feed:gain. Source of Cu did not affect performance. In Exp. 3, 630 pigs were weaned at 16 to 20 d and fed a common diet for 10 to 12 d until the start of the experiment period. The same experimental diets as used in Exp. 2 were fed from 9.1 to 25.5 kg BW. Both Cu sources improved ADG (P < .01), and sources and levels of Cu did not differ. Liver Cu increased in pigs fed 200 pp m Cu, and Cu sulfate tended to increase liver Cu more than did Cu chloride in one experiment, but not in another experiment. The results indicate that trisbasic Cu chloride is as effective as Cu sulfate in improving growth in weanling pigs.

Key Words: Pigs, Copper, Performance, Liver

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