COPPER AND ZINC HYDROXYCHLORIDE CO-SUPPLEMENTATION REDUCE THE DIARRHEA FREQUENCY OF FINISHING PIGS

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INTRODUCTION

Hydroxychloride minerals source (CHC and ZHC) are less reactive, increase feed stability, and bioavailability. The supplementation of these minerals in the diet of growing-finishing pigs can improve growth performance and reduce the diarrhea incidence. Thus, the present study aimed to investigate the effects of the co-supplementation of copper (Cu) and zinc (Zn) hydroxychloride (CHC and ZHC) minerals on diarrhea frequency of growing-finishing pigs.

MATERIAL AND METHODS

256 pigs distributed into 4 treatments

Growing Finishing	**T1*** 100 mg/kg $CuSO_4$ + 80 mg/kg ZnO 90 mg/kg $CuSO_4$ + 70 mg/kg ZnO
Growing Finishing	**T2** 150 mg/kg $CuSO_4$ + 80 mg/kg ZnO 150 mg/kg $CuSO_4$ + 70 mg/kg ZnO
Growing Finishing	**T3*** 100 mg/kg CHC + 80 mg/kg ZHC 90 mg/kg CHC + 70 mg/kg ZHC
Growing Finishing	**T4** 150 mg/kg CHC + 80 mg/kg ZHC 150 mg/kg CHC + 70 mg/kg ZHC

* flavomycin (50g/ton)

Statistical Analysis

- design in blocks with repeated measures
- experimental unit pen with 8 pig
- PROC MIXED (SAS)
- significance considered P < 0.05

Visual analysis score fecal: 1 = normal; 2 = pasty; 3 = severe diarrhea

RESULTS AND DISCUSSION

From 112 to 154 d, pigs that received the hydroxychloride sources showed a lower diarrhea frequency compared to the pigs fed with $CuSO_4$ and ZnO (Table 1, P < 0.05). Possibly the reduction of diarrhea in animals with CHC and ZHC was due to the higher bioavailability of these minerals, improving their functions (e.g., Cu on microbial load reduction and Zn on the protection and renewal of intestinal epithelial cells).

Table 1. Frequency of days with normal feces (%) of pigs from 70 to 154 days of age[1]

Item	Treatments				P-value
	T1	T2	T3	T4	
70-91 days	82.74 ± 4.49	77.98 ± 7.94	84.52 ± 5.60	82.74 ± 7.03	0.920
91-112 days	77.38 ± 6.41	76.79 ± 7.97	87.50 ± 4.31	85.12 ± 5.43	0.540
112-154 days	72.92 ± 7.79^b	71.73 ± 7.15^b	96.13 ± 1.34^a	93.16 ± 4.86^a	0.003

^{a,b}Different lowercase letters are significantly different (PDIFF, P < 0.05)

[1]Values represent mean ± error standard of the mean. Treatments: Growing (70-112 d): T1: 100 mg/kg $CuSO_4$ + 80 mg/kg ZnO; T2: 150 mg/kg $CuSO_4$ + 80 mg/kg ZnO; T3: 100 mg/kg CHC + 80 mg/kg ZHC; T4: 150 mg/kg CHC + 80 mg/kg ZHC; Finishing (112-154 d): T1: 90 mg/kg $CuSO_4$ + 70 mg/kg ZnO; T2: 150 mg/kg $CuSO_4$ + 70 mg/kg ZnO; T3: 90 mg/kg CHC + 70 mg/kg ZHC; T4: 150 mg/kg CHC + 70 mg/kg ZHC. T1 and T3 inclusion of flavomycin (50g/ ton.).

CONCLUSION

It can be concluded that the co-supplementation of copper and zinc hydroxychloride sources reduce the diarrhea frequency of finishing pigs.

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CAPES