79. 降低白肉雞排泄物銅鋅濃度

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本研究旨在探討白肉雞飼糧中銅鋅添加量，對其生長性能與排泄物銅鋅濃度的影響。選取 8 日齡白肉雞 480 隻，公、母各半，參照 NRC（1994）雞隻粗蛋白及代謝能需要量，調製以玉米－大豆粕為主的基礎飼糧。雞隻分置於基礎飼糧中添加 3 種不同銅鋅量及 2 種不同銅鋅型式，使成 6 種飼糧處理組：A 組及 B 組在飼糧中添加硫酸銅與硫酸鋅 4 與 20 mg/kg 及 8 與 40 mg/kg，C 組則添加硫酸銅及硫酸鋅使飼糧中銅與鋅的含量分別為 35 mg/kg 及 140 mg/kg；D、E 和 F 組添加蛋白質螯合型式的銅及鋅，添加量分別與 A、B 和 C 組相同，並於 A 組及 F 組飼糧中添加 500 U/kg 的植酸酶。每處理 4 重複，每重複飼養同性別 20 隻，至 35 日齡結束。每處理 4 欄、每欄飼養同性別的白肉雞 20 隻，至 35 日齡結束。結果顯示，各組的生長性能差異不顯著（$P > 0.05$），C 組和 F 組雞隻排泄物的乾物質中銅與鋅的濃度顯著地（$P < 0.05$）較其他四組為高，分別達 95 和 99 mg Cu/kg 與 317 和 320 mg Zn/kg。綜合以上結果，白肉雞餵飼以玉米－大豆粕為主要原料的飼糧，在飼糧中添加 8 與 40 mg/kg 的銅與鋅，對白肉雞的生長性能沒有顯著影響，而雞隻排泄物中銅鋅濃度則隨著銅鋅攝取量增加而提高。

關鍵語：白肉雞、銅鋅排泄量、生長性能

STUDIES ON REDUCING THE COPPER AND ZINC CONCENTRATION OF EXCRETA IN BROILERS

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The purpose of this study was to investigate the effect of dietary supplementation with different either forms or levels of copper and zinc on the growth performance and the copper and zinc concentration of excreta in broilers. Four hundred and eighty birds, eight days of age, half male and half female were assigned to six dietary treatments with four replicates, and 20 birds with the same age in each replicate. The groups A and B were fed the basal diet with two levels of copper and zinc i.e., 4 mg Cu/kg and 20 mg Zn/kg and 8 mg Cu/kg and 40 mg Zn/kg by adding $CuSO_4$ or $ZnSO_4$, respectively. Group C was fed the basal diet with copper at 35 mg/kg and Zinc at 140 mg/kg by adding $CuSO_4$ or $ZnSO_4$. The groups D, E and F were fed the basal diet with three levels of copper and zinc as the groups A, B and C, by adding Cu-proteinate or Zn-proteinate. Phytase was added to groups A and D at 500 U/kg. The broilers were fed *ad libitum* of diet and tap water during experimental period. The feeding trial was terminated when the broilers were at 35 days of age. The growth performance, Cu and Zn concentration of diet and feces were measured. The results showed that the different forms or levels of copper and zinc compounds did not affect ($P > 0.05$) the growth performance. The groups C and F had higher ($P < 0.05$) excretive Cu and Zn concentration than other groups, where the excretive Cu was 95 and 99 mg/kg, respectively and the excretive Zn was 317 and 320 mg/kg for groups C and F, respectively. In conclusion, broilers fed corn-soybean meal-based diets added 8 mg Cu/kg and 40 mg Zn/kg did not affect the growth performance. However, the Cu and Zn concentration in excreta was increased along with Cu and Zn intake increased.

Key Words: Broiler, Copper and zinc excretion, Growth performance