




**THESIS TITLE :      EFFECTS OF CHROMIUM PICOLINATE IN COMBINATION  
WITH RICE BRAN OIL OR TALLOW SUPPLEMENTATION  
ON BROILER PERFORMANCE AND CARCASS QUALITY.**

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### **ABSTRACT**

The purpose of these study was to determine the effects of chromium picolinate in combination with rice bran oil or tallow supplementation on broiler performance and carcass quality. Four hundred and fifty one-day-old Arbor Acres chicks were allotted in 2 x 3 Factorial in Completely Randomizwd Design experiment. Chicks were divided into 6 treatments and each treatment had 3 replicates of 25 chicks each. The birds were fed with corn soybean meal and fish meal basal diet. The diet was supplemented with 3 levels of chromium picolinate (0, 200 and 250 ppb) combination with 2 sources of fat (rice bran oil or tallow). Feed and water were given to the birds *ad libitum*. Performance data were record every week. At th end of the experiment (42 days of age), 12 birds from each treatment were randomly sacrificed to determine carcass quality, carcass grade, carcass percentage, abdominal fat and carcass composition (crude fat, crude protein, moisture and cholesterol) in the breast meat and liver tissue. Supplementation with chromium picolinate or fat source did not affect

( $P>0.05$ ) body weight gain, feed consumption or feed efficiency of broilers during all three periods testing (0-3 weeks, 0-6 weeks and 3-6 weeks) but body weight gain during 0-5 weeks were significantly difference ( $P<0.05$ ) when supplementation with fat source. Dietary chromium picolinate and fat source supplementation did not affect ( $P>0.05$ ) carcass quality, carcass grade, carcass percentage, abdominal fat, liver or breast and leg meat weights. Chicks fed the dietary chromium picolinate showed evenly in increased ( $P<0.05$ ) total meat weights (breast plus leg meat) when compared with the control group. The crude fat and moisture in breast meat and liver tissue were not influenced by the dietary chromium picolinate diets levels or fat source when fed to chick. Chicks fed with the chromium picolinate showed increased ( $P<0.05$ ) in the breast meat proportionally with increasing chromium picolinate levels, but no influenced in liver tissue response. Chromium picolinate and fat sources supplementation in the diets did not affect ( $P<0.05$ ) on cholesterol in the breast meat and liver tissue. However, mortality of birds was reduced with the birds fed the diets supplementation chromium picolinate at either 200 or 250 ppb. The results of the present study indicated that chicks fed with the chromium picolinate (200 or 250 ppb) had tend to be improved broiler performance, carcass quality and mortality as same as chick fed with the rice bran oil.