

## SUMMARY

### **Determination of Effectiveness of Phytase Supplementation to Mineral Phosphorus Free Broiler Chick Diets**

This study was carried out to evaluate performance (body weight, feed intake and feed conversion ratio), carcass yield, some organ weights (liver, heart and spleen), tibia weight, tibia ash level, serum and tibia P, Ca, Mg and Zn concentrations of broilers fed with phytase supplemented mineral P free diets.

A total of 375 Ross 308 male broilers were used in study. One-day-old chicks were randomly assigned into (+) control, (–) control and treatment groups consisted of five replications each containing 25 chicks.

A starter diet with 22,78% crude protein and 3050 kcal/kg metabolisable energy was used. Three dietary treatments were formed as followed: (1) (+) control group diet had 0,45%  $aP$  with dicalcium phosphate, (2) (–) control group diet had 0,13%  $aP$  without dicalcium phosphate, (3) (–) control diet + 500 FTU/kg phytase.

The results were indicated that average body weight and feed intake were significantly ( $P<0,001$ ) influenced by phytase addition and dietary  $aP$  level. Feed conversion ratios were not influenced by phytase addition, (+) control group was higher than other treatment groups ( $P<0,01$ ).

Carcass yield was not affected by dietary treatment. Liver and heart weights were affected ( $P<0,001$ ) by phytase supplementation and dietary  $aP$  level. Spleen weight did not affected among treatment groups significantly.

Serum  $iP$ , Ca and Mg concentrations were not influenced by phytase addition,  $iP$  concentration in (+) control group was higher than other treatment groups ( $P<0,001$ ). Ca and Mg concentration in (+) control group was lower than (–) control and treatment groups

( $P < 0,001$  and  $P < 0,01$ ). Serum Zn concentration in (+) control group was lower than (-) control group significantly ( $P < 0,05$ ).

Tibia weight and ash level were affected by dietary treatment significantly ( $P < 0,001$ ). P, Ca and Mg concentrations in tibia ash were not influenced. Zn concentration determined in ash was affected by dietary treatment significantly ( $P < 0,001$ ).

**Keywords:** Broiler chick, phosphorus, phytase, performance, tibia.