Minufiya J. Agric. Res. Vol. 34 (2009) NO. 4 : 1513-1524

EFFECTS OF PHYTASE SUPPLEMENTATION ON THE PERFORMANCE OF BROILER CHICKS FED LOW PHOSPHORUS DIETS

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ABSTRACT:

This study was conducted to evaluate the overall performance of 1- to - 42 d old, unsexed Ross broiler chicks when graded levels of dietary phytase were supplemented in excess of industry standards. A total of 315 Ross broiler chicks, were distributed at random into 7 groups each in 3 replicates. The experimental diets consisted of a basal corn-soybean meal diets that contained 0.90% Ca, low total P (t P) level of 0.46 % and calculated ME of 3100 kcal /kg diet, in addition to a positive control diet that contained 0.70% t P. The dietary microbial phytase levels evaluated were 750, 1500, 3000, 6000 and 12000 U / kg diet. The results showed that body weight and body weight gain were significantly (p â‰¤ 0.05) increased with increasing dietary phytase levels. Also, feed intake (86.23 vs.74.37), feed conversion (1.94 vs. 2.40) and performance index (PI) (91.13 vs. 50 21) were significantly (p â‰¤ 0.05) improved with increasing dietary phytase levels up to 3000 FTU / kg low P diet (T5) vs. T2 (low P, no phytase supp.). Dressing percentage was significantly affected but liver percentage was not affected. Tibia length and tibia breaking strength were affected. Tibia calcium % was not affected but tibia phosphorus % was significantly increased. Findings of this study indicate that broilers consuming a t P- deficient corn â€“ soybean meal diet can achieve maximum performance and economical efficiency when supplemented with 3000 FTU phytase / kg diet.

Key words: Broiler, microbial phytase, performance, phosphorus

Minufiya J. Agric. Res. Vol. 34 (2009) NO. 3 : 1011-1025

DIRECT SELECTION RESPONSE FOR FEED EFFICIENCY OF EGG PRODUCTION

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ABSTRACT:

The present experiment was carried out in the Poultry Farm, Department of Poultry Production, Faculty of Agriculture, Minufya University at Shibin El-Kom, Egypt. The local strain used was Sinai Bedouin fowl. The experiments lasted for four years, starting from October 2004. The aim of the experiment was to study the effect of selection for high feed efficiency on laying Sinai hens. A base population consisted of 300 Sinai pullets aged 38 weeks were used to measure individually residual feed consumption (R) as will be mentioned later. Feed consumption (FC) was calculated as the difference between taken feed and residual feed. To improve feed efficiency for egg production during 90 days (FE) mass selection was applied. Fifty hens were selected for high feed efficiency to be used as parents for next generation. A total of 50 hens were chosen at random from the base population as a control line with no significant difference between control and the base line. In each generation 50 females and 17 males were chosen at random with aim to keep family size stable as possible in order to minimize the inbreeding, and mated randomly with expections full sib mating. The following results were obtained : 1. The means of the selected trait [feed efficiency (g F / 1 g egg)] for the selected line and control line were estimated among the base population and three selected generations 1, 2 and 3, respectively. In the selected line means of feed efficiency were 5.66, 5.63, 11.39 and 4.76 [(g) feed / 1 g egg) in base, 1, 2 and 3, generations, respectively. The corresponding values in control line were 6.66, 6.98, 11.91and 7.93 (g Feed / 1 g egg), respectively. 2. The differences between generations were highly significant. The difference between the selected line and control line was also highly significant. But the interaction between generations and lines was not significant. 3. The cumulative realized selection response in last generation was equal to â€“ 3.17 g where the expected value was â€“ 2.88 g and in the same generation the difference was equal to (- 0.25). These results illustrate the possibility of improving feed efficiency of Sinai Bedouin fowls during laying period by direct selection for more than 3 generations of individual selection method or by using selection indices, family selection and independent culling level for more rapid and high selection responses. 4. It was noticed that the realized heritability was higher (0.75) than the calculated value (0.419) from dam component.

Key words: Selection, Feed efficiency, Sinai fowl.