

## Effects of Selection by Serum IGF-I Concentration in Korean Native Ogol Chicken

D. H. Kim, M. H. Kim, W. J. Kang, D. S. Seo, and Y. Ko

Department of Animal Science, Korea University

Phenotypic characteristics and genetic markers in livestock have been utilized for improvement of the economic traits including egg productivity. Korean Native Ogol Chicken (KNOC) has low egg productivity compared to White Leghorn. Therefore, in this study, serum IGF-I concentration and number of egg production were used as selection markers to improve egg productivity. KNOCs were divided into three groups showing high IGF-I concentration (IGF-I high), high egg production (EP high), and IGF-I/EP high groups. Blood was collected every 10 weeks, and serum concentrations of IGF-I, estradiol (E2), and progesterone (P4) were measured by radioimmunoassay. In comparison of three groups in each generation, the highest increment of egg production was detected in the IGF-I/EP high group from 20 weeks till 40 weeks, and the IGF-I high group also showed the significant increment of egg production after 50 weeks. Interestingly, there were the increase of egg production and decrease of periods in sexual maturity in the second and third generation selected by serum IGF-I concentration, while egg weight and body weight decreased during experimental period. In conclusion, the present study suggest the possibility of IGF-I as a selection marker to improve the egg productivity of KNOC.

Key words) *IGF-I, Progesterone, Estradiol, Egg production, KNOC*