

Relationship between Egg Productivity and IGF-I Genotypes in Korean Native Ogol Chicken

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Endocrine factors, such as steroid hormones and growth factors, regulate egg productivity including the number of egg production, egg weight, sexual maturity, and the number of small yellow follicles. Especially, insulin-like growth factor-I (IGF-I) is involved in the regulation of ovulation rate and ovarian follicular development in chickens, and the relationship between IGF-I genotype and egg weight was reported. However, the effect of growth factors on egg productivity in Korean Native Ogol Chicken (KNOC) has not been studied. Therefore this study was conducted to identify the relationship among endocrine factors, IGF-I genotypes, and egg productivity. IGF-I genotypes (AA, AB, BB) were represented to 12.6%, 34%, and 53.4%, respectively. AB genotype stimulates the secretion of estradiol and progesterone in serum (30 and 40 week), regulates growth and proliferation of follicles at 60 weeks, and is positively associated with the number of small yellow follicles. Therefore, these results suggest that there are possibility to IGF-I genotypes for a genetic marker in egg productivity of KNOC.

Key words) *Egg productivity, IGFs, IGF-I genotype, Estradiol, Progesterone, KNOC*