GENETIC AND PHENOTYPIC PARAMETERS FOR SPERM – EGG PENETRATION AND SOME SEMEN TRAITS FOR WHITE LEGHORN COCKS.

A.J. Al-Rawi*  M.F. Al-Baghdadi*  H.J. Al-Daraji**

*College of Agric.- Al-Anbar Univ.
**College of Agric.- Baghdad Univ.

ABSTRACT

This study was conducted at the Poultry Farm of the Animal Resource Department, College of Agriculture, Baghdad University, during the period from 8/10/2007 to 28/3/2009, to study the genetic evaluation of White Leghorn flock for selection according to sperm – egg penetration, semen characteristics, fertility and hatchability traits, egg production traits (weight of first egg, egg weight, egg production at the first 100 days of production, egg mass and the body weight at sexual maturity) and histological testis traits, after the adjustment of fixed effects, and estimate of its genetic parameters.

The General Linear Model –GLM procedure, within the SAS program was used to study the effect of fixed factors, and to determined the random effect by using Restricted Maximum Likelihood – REML, for sire (24), dams (114). These values were ranked in descending order for selection purpose. Results obtained can summarized as follows:

1- Means of sperm – egg penetration was 74.25 hole / 1.5 mm² and for other semen traits were 3.98 x 10⁹ ml for semen concentration 20.13% for spermatocrit, 0.44 ml for semen volume, 82.19% for mass motility, 84.99% for individual motility, 11.09% for percentage dead spermatozoa, and 10.41% for the percentage of abnormal spermatozoa, Whereas the heritabilities and repeatabilities for these traits were (0.79, 0.86), (0.34, 0.42), (0.25, 0.29), (0.19, 0.34), (0.26, 0.48), (0.18, 0.44), (0.14, 0.37) and (0.36, 0.43), respectively.

2- The effect of season on traits include in this study was highly significant (P < 0.01) in winter than in summer.

3- There was high positive genetic and phenotypic correlations between SP with semen concentration, (0.42, 0.45) spermatocrit (0.89, 0.91), semen volume (0.34, 0.37), mass motility (0.92, 0.95), and individual motility (0.91, 0.92).