# GENETIC DIFFERENTIATION OF PURE CHICKEN LINES OF "LOHMAN WHITE LSL" CROSS

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**Summary.** Variation in the protein mobility during electrophoresis allows to be detected alleles of a corresponding gene. By means of the data of such biochemical markers as common proteins it is possible to evaluate genetic differences between lines and strains. Our aim was to describe initial chicken lines A and B (sire combination) and C and D (dam combination) of "Lohman White LSL" cross according to a genetic structure of common proteins and to evaluate genetic differences and similarities between lines. Blood sera proteins were investigated by means of polyacrilamide gel electrophoresis. Such parameters as the allele frequency, heterozygosity, genetic similarity were calculated with ther help of computer program Biosys-2 (Swoffard, Selander, 1997). Eight loci of common proteins (PreAl-1, PreAl-2, Al, PostAl, PreTf, PostTf, Mc, Tf) were separated during electrophoresis. All the loci studied were polymorphic and frequencies of alleles were different for each chicken line. The most profound differences were obtained in C line of the dam combination. Eight alleles with original frequencies in loci Pre-1, Al, PreTf, Tf were detected among the individuals of that line. Two loci (Al ir Tf) with the original frequency of alleles were detected in the second line of the dam composition - line D. Three alleles in loci (PreTf and Tf) and five alleles in loci (PreAl-1, PostAl, Tf) prevailed between lines of sire composition A and B respectively. Pronounced deficiency of heterozygotes was detected among all the lines investigated. The average heterozygosity observed was lower than expected. The genetic identity (I) and genetic distance (D) were calculated according to Nei (1972) and Wright (1978). On the basis of the data obtained phylogenetic analysis of four chicken lines was carried out. The highest genetic identity was detected between lines B and D (I=0.991) and the highest genetic distance was determined between lines C and D. According to the cluster analysis, lines B and D formed one cluster, whereas line C formed a separate branch. Line A formed an intermediate branch in the dendrogram.

**Keywords:** chicken lines, electrophoresis, polymorphism, alleles.