

V. Foksha, A. Konstandoglo. The valuation of immunogenetical distinction between the descendants of different bulls

The article presents the results of detailed genetical valuation between the descendants of different bulls in the period from 2003 till 2013. The aim of this research was to give a detailed genetic evaluation of the descendants of different bulls used in the herd of STE "Maximovca" at the relevant period of time.

The object of the study was the heifers of Moldovan type of black-and-white cattle – the descendants of 11 bulls. Blood groups were determined by standard serological tests with the use of 49 monospecific sera from 9 genetic systems. All the attested livestock of breeding young growth of 2003-2013 are authentic, that is proved by the materials of the expertise of the authenticity of origin.

According to AEB-locus at the descendants of all the bulls, common from 25 studied antigens were only 6 – B₂, G₂, O₂, Y₂, E'₂ and Q'.

The low frequency of occurrence of antigens P₂, Q, T₁, K', J'₂, P' is peculiar mainly for all the analysed descendants. The smallest genetic distance is identified between the descendants of bulls Academic 767 and Senior 7415 – 0,1291, and the highest one – between the descendants of bulls Abhazian 835 and Dikii 788 – 0,3095.

The descendants of the evaluated bulls form four separate clusters: the first cluster consists of descendants of bulls Senior – Academic, the second cluster – Abiturient – Captain, the third cluster – Abhazian – Kiperush and the fourth cluster – Meteor – Karas. Herewith the linear belonging of bulls in the first three clusters is different and only both bulls of the fourth cluster (Karas, Meteor) refer to bloodline of Vis Back Ideal.

The total frequency of occurrence of the basic alleles varied from 0,2250 (the descendants of bull Kiperush 79) to 0,4071 (the descendants of bull Dikii 788). The lowest coefficient of homozygosity turned out to be at the descendants of Abiturient 861 and Svet 732 – 5,7%. The greatest genetical resemblance is revealed between the descendants of bulls Academic 767 and Senior 7415 (r=0,8709). It is observed the tendency of increasing coefficient of homozygosity (descendants, born in 2009-2013) – 18%, that led to the shortening of numbers of effective working alleles from 17,3 (the descendants of bull Abiturient) to 5,4 (descendants of bull Meteor) and to shortening of the indicator of the degree of the possible genetical changeability to 86,4%.

Alleles which are inherent to Holstein American, Canadian and European selection – B₂O₂Y₂D' and B₂G₂ are identified in the allele pool of the descendants of bulls Dikii, Svet and Senior.

Conclusions. The main specific gravity in the structure of the allele pool of blood groups at the descendants of different bulls occupies the alleles, identified in the previous research of the herd of STE "Maximovca". The descendants of 9 bulls are the carriers of 11 alleles of EAB-locus which are characteristic for Red Steppe breed (B₁I₁, B₂O₁Y₂, G₂O₁, G₂D', O₂B', G₂O₁Y₂, O₁Y₂, Y₂D', Y₂Y', P₁I', O₂D').

The tendency of the coefficient of homozygosity growth at the descendants, born in 2009-2013 (Ca=18%), led to reduction of the number of effective alleles

from 17,3 to 5,4 and decrease of the indicator of the possible genetic variability to 86.4%.

Keywords: **heifer, bull, antigene, allele, genetical resemblance**