

THE INCREASING OF SELECTION EFFICIENCY BY IMPROVEMENT OF THE BLACK AND WHITE CATTLE POPULATION IN LITHUANIA

Vida Juozaitienė

Summary. During the last five years the average milk yield and milk albumen production of the controlled Black and White cows in Lithuania increased about 33 to 34 % and milk fat production – 40 %. According to the method of the analysis of Variance (ANOVA) we determined that the productivity of cows was reliable under the influence of the line of bulls (from 7.1 to 8.6 %, $P<0.001$), fathers breed (1.5 – 3.0 %, $P<0.001$) and inconsiderable under the influence of the cows breed (1.1 – 1.7 %, $P<0.05$). We determined not large negative phenotypic correlation ($r_p = 0.05$, $P<0.01$) between the milk yielding capacity and milk protein and between the milk yielding capacity and milk fat tying – not large positive correlation ($r_p=0.001$), between milk fat tying and protein – average positive correlation coefficient ($r_p = 0.44$, $P<0.01$). We determined reliable high correlation coefficients between the milk yielding capacity and milk fat and milk protein production ($r_p = 0.88 - 0.96$, $P<0.001$). The variation of the phenotypic production indices is sufficient for implementation of the effective selection. According to the separate selectional indications the arithmetic average limit was exceeded in the Black and White population 2 δ and more times (from 2.9 to 4.9 % of cows) and according to the three correlative production indicators (milk yielding capacity, milk proteins and milk fats) – 1.5 % of Black and White cows. This proves that there is a sufficient base of selected cows in Lithuania for selection, and demands for their productivity must be increased periodically, taking into account the dynamics of the population productivity. These demands must be not less than 2 δ according to the production indicators mentioned above.

Keywords: Lithuanian Black and White cattle, breed, milk, fat, protein, correlation coefficients.