

THE RELATIONSHIPS OF INBREEDING DEGREE WITH BLACK AND WHITE CATTLE BREEDING VALUE AND CULLING FREQUENCY IN LITHUANIA

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Summary. The present study was designed to evaluate the relationships of inbreeding degree with Black and White cattle breeding value and culling frequency in Lithuania. It was estimated that the average degree of inbreeding of the Black and Whites population in Lithuania corresponds to the distant inbreeding level (0.61% for bulls and 0.81% for cows), but it shows an increase in 0.038 % per year for cows ($R^2 = 0.754$) and in 0.027% per year for bulls ($R^2 = 0.421$) ($P < 0.05$). The highest average of inbreeding coefficient was determined in the Holstein bulls (1.5 fold higher compared to the Black and Whites population) and the lowest in the British Friesian bulls ($P < 0.001$). Increment of inbreeding degree in bulls, improve a statistically significant indexes of breeding value for milk production and composition ($P < 0.001$) and worsen the somatic cell count in milk ($P < 0.01$) and reproduction and longevity indexes ($P < 0.01$). It was shown that the highest degree of inbreeding was significantly associated with the culling of cattle from leucosis ($P < 0.0001$).

Knowing that in the Lithuanian Black and White cattle population inbreeding degree of cows gradually increase, it is necessary to control the use of bulls in the herd, thus avoiding the possible occurrence of inbreeding depression.

Keywords: Black and White cattle, degree of inbreeding, breeding value, culling, leucosis.